

**RESPONSE
ATTACHMENT A6**

APPENDIX 6

**RCRA CONTINGENCY PLAN AND
EMERGENCY RESPONSE PLAN**

RCRA CONTINGENCY PLAN

AND

EMERGENCY RESPONSE PLAN

EXIDE TECHNOLOGIES
BATON ROUGE SMELTER

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In Compliance with OSHA Emergency Response Plan (29 CFR 1910.120) and RCRA Contingency Plan (40CFR 262, 264 and 265) requirements.

TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION	1
1.1 Purpose	1
1.2 Authority to Invoke Plan	1
1.3 Training	1
1.4 Background	2
1.5 Arrangements with Local Authorities	2
1.6 Record Keeping	2
1.7 Facility Hazards	2
2.0 ASSIGNMENT OF DUTIES	3
2.1 Chief Officer	3
2.2 Assistant Chief Officer	4
2.3 Safety Officer	4
2.4 Communications Officer	4
2.5 Utilities Officer	5
2.6 Liaison Office	5
2.7 Fire Officer	6
2.8 First Aid Officer	6
2.9 Maintenance Office	6
2.10 Guard Officer	7
2.11 Evacuation Wardens	7
3.0 EMERGENCY RESPONSE	8
3.1 Order of Notification	8
3.2 Plant Communications	8
3.2.1 Communication Center	8
3.2.2 Communications Failure	8
3.2.3 Emergency Telephone Numbers	8
3.3 Evacuation and Assemble Areas	9
3.3.1 Evacuation	9
3.3.2 Medical Evacuation	10
3.3.3 Assembly Areas	10
3.4 Rescue	10
3.5 Emergency Equipment	10
3.6 Control of Access to Damaged Areas	11
3.7 Public Relations	11
3.8 Decontamination	11
4.0 TYPES OF EMERGENCY SITUATIONS	11
4.1 Natural Disasters	12
4.1.1 Hurricanes	12
4.2.1 Tornadoes	12

TABLE OF CONTENTS (Continued)

	<u>Page</u>
4.2 Chemical Emergencies	12
4.2.1 Acid	12
4.2.2 Hazardous Material Releases	13
4.3 Fire	13
4.3.1 Flammable Gases	14
4.3.2 Fire Prevention	14
4.4 Explosion	14
4.5 Bomb Threat Procedure	14
5.0 PLANT OR UNIT SHUTDOWN	15
5.1 General	15
5.2 Blast Furnaces	15
5.3 Reverberatory Furnace	15
5.4 Baghouses	16
5.5 Natural Gas	16
5.6 Electrical Power Supply	16
5.7 Water Supply	16
5.8 Mobil Equipment	16
6.0 ALARM SYSTEM	16

LIST OF TABLES

Table 1 - Employee Emergency Notification Telephone List

Table 2 - Emergency Services Telephone List

LIST OF FIGURES

Figure 1 - Site Location Plan

Figure 2 - Emergency Response Organizational Chart

Figure 3 - Locations of Emergency Equipment

LIST OF APPENDICES

Appendix A - Arrangements with Local Authorities

Appendix B - Tier Two Report

Appendix C - MSDS Sheets for Products Produced at the Baton Rouge Smelter

Appendix D - List of Emergency Equipment

1.0 INTRODUCTION

1.1 Purpose

The Exide Technologies, Baton Rouge smelter is located in Baton Rouge, East Baton Rouge Parish, Louisiana. This facility is a secondary lead smelter and refinery that recycles spent lead-acid batteries and inorganic lead-bearing wastes into product lead.

This RCRA Contingency Plan and Emergency Response Plan (herein referred to as "the Contingency Plan") has been formulated in order to minimize personal injury and property damage in the event of a plant emergency or natural disaster. This plan meets the regulatory requirements specified in 29 CFR 1910.120, 40CFR 262, 264 and 265, and LAC 33:V.1513. Section 2.0 of the plan lists the assignment of duties for all Contingency Plan officers, and provides an organization chart designating responsibility. Section 3.0 of the plan documents emergency response procedures such as assemble areas and communications. Types of emergency situations and how to deal with these situations are detailed in Section 4.0 of the plan. Section 5.0 of the plan describes the plant and unit emergency shutdown procedures and Section 6.0 presents the alarm system.

Copies of this plan will be distributed to local and state law enforcement agencies, area hospitals, local fire and rescue units and the East Baton Rouge Emergency Planning Commission. This plan will be reviewed annually and updated as necessary to reflect changes in emergency procedures or equipment, site hazards or emergency personnel.

Transportation emergencies and over-the-road spill response are addressed in Exide's Transporter Contingency Plan.

1.2 Authority to Invoke Plan

The Chief Officer or his alternate will act as the Emergency Coordinator with full authority to implement the plan. If an incident occurs when the Chief Officer is not present, the plan will be invoked by the senior supervisor present. If a supervisor is not readily available and an emergency situation occurs, any employee is authorized to request the guard to sound the alarm if necessary to minimize hazards to human health and the environment in obvious emergency situations. Table 1 of this plan presents a list of the names and telephone number of all Contingency Plan Offices. To report emergencies, any employee can use the portable radios in the plant or the in-plant telephone system.

1.3 Training

All Exide employees will receive initial training on the Contingency Plan and follow-up refresher training at least once per year. The training is given in the form of classroom instruction and on the job training. The training includes review of the Emergency Response Organization, the plant alarm system, the assembly areas and evacuation routes. The emergency telephone contact list is discussed and the locations of facility chemicals and MSDS sheet binders is reviewed. A copy of the most recent Tier II submittal is included in the plan and that list is reviewed and discussed with the

employees. The emergency equipment list is discussed with all employees during the training sessions, including where emergency equipment is kept and the capability of the equipment. Additionally, all facility supervisors have first aid and CPR training and certification from the Baton Rouge Safety Council.

Any employee that has a specific duty or responsibility in the plan will receive additional training detailing their specific responsibilities. Training will be conducted when an employee's responsibilities or designated actions under the plan change and whenever the plan is changed or updated.

1.4 Background

The Exide Baton Rouge smelter is located at 2400 Brooklawn Drive, in East Baton Rouge Parish, Louisiana. This facility is a secondary lead smelter and refinery which recycles inorganic lead-bearing materials into lead pig and block ingots, which are sold to customers for use in making batteries, weights, bearings, ammunition, and chemicals. The facility has been in operation since the 1960s. Figure 1 shows the facility and surrounding area.

Spent lead acid batteries are delivered to the facility in trucks or trailers and are unloaded at the loading dock. The batteries are fed into the battery breaker unit, and are processed into individual components. Other lead-bearing materials are stored in feed-stock piles in the Containment Building. The facility operates one blast furnace (the No. 1 blast) and one reverberatory furnace (the No. 3 reverb) that are used to smelt the lead-bearing raw materials. The molten lead is refined and then cast into bars or blocks. The finished lead is loaded into trucks and transported off-site for reuse.

1.5 Arrangements with Local Authorities

Exide has made arrangements with local fire departments, emergency response first aid and ambulance services, law enforcement, HAZMAT services and hospitals. The list of emergency telephone contact numbers is included in Table 2 of this Plan. Appendix A contains documentation of the arrangements.

1.6 Recordkeeping

Exide will maintain all records pertaining to the Contingency Plan in the facilities Environmental Health and Safety files. The records include detailed incident reports documenting each time the Plan is invoked, along with follow-up reports and root cause analysis. Additional records include fire extinguisher inspection reports, training records, emergency drills, updated MSDS and Tier II submittals and emergency equipment and emergency alarm inspections.

1.7 Facility Hazards

The Baton Rouge smelter recycles lead-acid batteries and other lead bearing materials. Some of the materials received are classified as hazardous wastes or hazardous materials. Hazardous waste

storage areas shown on Figure 3 include the Whole Battery Storage Area, the Truck Trailer Storage Area, and the Containment Building. Additionally, some of the chemicals used at the Baton Rouge smelter are hazardous, flammable or explosive. The Baton Rouge smelter does not have any PCBs or organic lead.

Appendix B contains the latest copy of Exide's Tier Two report that lists all of the hazardous chemical used on site along with the location that the chemicals are stored. Material Safety Data Sheets (MSDS) are kept in the Safety Office, in the Control Rooms and at the Guard House. The MSDS binders are updated by Exide when new chemicals are received. MSDS sheets for all of the products that the Baton Rouge smelter produces are included in Appendix C.

Some of the areas that could pose a danger during an emergency or natural disaster include:

- the phosphorus storage area where red phosphorus is kept,
- the sulfuric acid tanks, two 15,000 gallon tanks that contain battery acid (sulfuric acid at concentrations of approximately 15%-20%),
- the chemical warehouse, where most refining chemicals are kept including metallic calcium, metallic selenium, metallic arsenic, sulfur, and sodium nitrate,
- the chlorination unit that contains two 105 lb. cylinders of chlorine gas for treating potable water,
- the gasoline tank (1,000 gallons) and diesel tank (2,000 gallons) near the smelter entrance,
- the maintenance shop where acetylene and oxygen gas cylinders are stored in racks,
- two caustic (sodium hydroxide slurry) tanks, each with a capacity of 10,000 gallons,
- the oxygen plant, where liquid oxygen is stored,
- the battery breaker unit which has acid storage tanks, peroxide and treatment chemicals,
- the production area, where the furnaces are operated and molten lead is refined and cast.

As indicated in the Spill Prevention, Control and Countermeasures Plan, all tanks and transfer equipment are visually inspected on a daily basis as part of normal operations and more detailed quarterly inspections as required by LAC 33:IX.907.J. While these tanks store some hazardous materials such as fuels, acids and caustics, none of the tanks store hazardous waste and therefore, are not regulated under LAC 33:V. All tanks have secondary containment as required by LAC 33:IX.907.F.1.

2.0 ASSIGNMENT OF DUTIES

The Organizational Chart, shown on Figure 2, lists each Contingency Plan officer and presents the chain-of-command that will be followed in the event of an emergency. Since emergency situations can happen at any time, the Organizational Chart lists an assistant position for each Contingency Plan officer, in the event that the primary officer is not available. Table 1 presents a list of emergency telephone numbers for all Contingency Plan Officers.

2.1 Chief Officer

The Chief Officer has overall responsibility for all emergency actions and will act as the emergency coordinator during any emergency situations. The plant manager will fill the role of the Chief Officer. He is qualified to act as the Emergency Coordinator as defined by the applicable LDEQ and EPA regulations. The Chief Officer (Emergency Coordinator) at the Baton Rouge smelter is:

Mr. Joseph Acker Jr. – Plant Manager

Address – Plant

2400 Brooklawn Drive

Baton Rouge, LA 70807

(225) 775-3040 – Office

Address - Home

13410 E. Lakeshore Dr

Prairieville, LA 70769

(225) 673-6187

The Chief Officer will direct this Contingency Plan from the scene of the affected area. After the emergency or disaster is under control, he will direct salvage and re-establishment of operations. Whenever there is an emergency or natural disaster, the Chief Officer will identify the character, source amount and areal extent of any released material. The Chief Officer will meet with all of the Contingency Plan officers to assess all possible hazards caused by the emergency situation.

In the absence of the Chief Officer, the Assistant Chief Officer will assume the duties of the Chief Officer.

2.2 Assistant Chief Officer

The Assistant Chief Officer will advise and assist the Chief Officer and, in the absence of the Chief Officer, will direct the plan. The Production Manager, Mr. Craig Simpson, will act as the Assistant Chief Officer. He will be assisted by the Plant Superintendent, Mr. Larry Myers. The Assistant Chief Officer will be responsible for the safe shutdown of the smelter and other facilities, where necessary, as well as continued operation of unaffected facilities. The Assistant Chief Officer will also ascertain evacuation of hazardous areas by operating personnel when such evacuation is considered necessary.

The following are some of the assigned duties of the Assistant Chief Officer:

- Assist the Chief Officer and other Contingency Plan officers as needed.
- Advise the families of any injured employees.

- Prepare necessary press release for approval of the Chief Officer. He will have the Communications Officer transmit these to the press.
- Compile a headcount list for the Chief Officer.

In the event that a Contingency Plan Officer and his assistant are absent, the Assistant Chief Officer, Mr. Craig Simpson will assign a qualified person to carry out the appropriate duties.

2.3 Safety Officer

The Safety Officer will assist the Chief Officer in all aspects of emergency planning, preparedness, response and training. The Health and Safety Coordinator, Ms. K.C. Lashley will act as the Safety Officer. She will report to the Chief Officer in the event that this plan is invoked and will directly assist in emergency response efforts. The Safety Officer will inspect all required emergency equipment and document that all equipment and supplies are in a state of readiness. She will be aware of all emergency needs and work constantly toward providing a safe work place. The Safety Officer will plan in advance to meet any emergency situation that may present itself.

2.4 Communications Officer

The Communications Officer will maintain an up-to-date list of home telephone numbers of all key employees. The company controller, Mr. Tommy Payne, will act as the Communications Officer and will be assisted by the plant telephone operator and the payroll clerk. In the event the Communications Center must be moved, the list will be taken to the new Communications Center. Some of the duties of the Communications Officer will be:

- Notify all Contingency Plan Officers as expeditiously as possible of any changes in location of the Communications Center from its normal location at the front office.
- Dispatch two men to report to the Chief Officer to serve as messengers.
- Monitor telephone communication so that only essential calls are permitted. Assign priority to calls if necessary.
- Release injury information to families at the direction of the Chief Officer or his Designee.
- Give press releases, as directed by the Chief Officer.

2.5 Utilities Officer

The Utilities Officer is responsible for the oversight and control of power, water, natural gas and oxygen. The senior plant engineer, Mr. Pat Roy, will act as the Utilities Officer. The Plant Electrician, Mr. Johnny Turner, will assist the Utilities Officer. The duties of the Utilities Officer include:

- Arrange for emergency shutoff of utilities as necessary.
- Arrange for emergency water and electric power in areas that require it.
- Work with the Maintenance Officer in arranging for auxiliary equipment.

Additionally, the Utilities Officer will be responsible for advising other Contingency Plan Officers and outside assistance groups such as the Fire Department or law enforcement on special hazards associated with the emergency. These hazards may include toxicity and flammability of released products or byproducts likely to be formed in a reaction. The Utilities Officer will advise the Guard Officer to evacuate or block traffic into affected areas.

The Utilities Officer or his alternate will make an on-site inspection of the affected area to:

- Assess the situation and determine possible hazardous conditions.
- Evacuate affected areas where advisable (contact the Chief Officer first, if practical).
- Make notes of any complaints from neighbors.

2.6 Liaison Officer

The Liaison Officer will work with the Chief Officer in familiarizing all smelter personnel with Emergency Contingency Plan and ascertain that each person knows his duties and responsibilities. The Environmental Manager will act as the Liaison Officer. He will be assisted by the Environmental Superintendent. The following are some of the duties of the Liaison Officer:

- Maintain and control smelter and private transportation.
- Work with the Utilities Officer in obtaining emergency water and electric power.
- Prepare press releases and advise families, as required, in the absence of the Assistant Chief Officer.

Additionally, the Liaison Officer will notify the proper Louisiana Department of Environmental Quality administrative authority and other appropriate federal, state and local authorities that the facility is in compliance with all regulations before operations are resumed in the affected areas.

Immediately after an emergency has been brought under control, the Liaison Officer will provide for the treatment, storage and disposal of recovered waste, contaminated soil or surface water or any other material that results from a release, fire, or explosion at our facility. All materials will be managed in accordance with all applicable regulatory requirements.

2.7 Fire Officer

Fire Officer will be responsible for supervision of all fire fighting activities. The Maintenance Supervisor, Mr. Mike Ashford, will act as the Fire Officer. The CX Production Manager, Mr. Robert Delmore, will assist the Fire Officer. The Baton Rouge smelter does not have an onsite fire brigade. In the event of a fire the Fire Officer or his designate will coordinate efforts of local and City of Baton Rouge Fire Departments.

In the event that the emergency is other than fire, the Fire Officer and his personnel will automatically come under direction of the Utilities Officer.

2.8 First Aid Officer

The First Aid Officer will direct first aid, as necessary, and request doctors and/or ambulances, as required. The Personnel Director, Ms. Jo Wood, will act as the First Aid Officer. She will be assisted by the Laboratory Supervisor, Mr. Jason Bankston. An ambulance will be called immediately if there is any probability of need. The First Aid Officer will be responsible for insuring that any injured person transported off-site has been properly decontaminated and is not wearing contaminated clothing. The First Aid Officer will notify the Assistant Chief Officer of the names of injured persons and the extent of injury to best of her ability.

First aid operations will be set up in the First Aid Room. If larger accommodations are necessary, the conference room will be used. Injured personnel will be taken to these areas. In event the First Aid Room cannot be used, an alternate First Aid Room will be set up near the gate. A minimal supply of first aid materials will be maintained in an Emergency Bag to be dispatched where needed. The First Aid Officer will notify all Contingency Plan Officers, through the Communications Center, of the change in normal location of the First Aid Room.

2.9 Maintenance Officer

The Maintenance Officer's primary responsibility is to perform emergency maintenance work necessary to prevent injury to personnel and minimize damage to property, product or materials. The Maintenance Supervisor, Mr Mike Ashford, will act as the Maintenance Officer. He will be assisted by the Maintenance Superintendent.

The Maintenance Officer will direct his personnel to assist the fire crew as directed by the Fire Officer; assist any rescue operations with heavy equipment as necessary; and assist in restoration of communications, utilities, and roadways.

2.10 Guard Officer

The Guard Officer is responsible for plant security, protection of plant property and traffic flow. The Guard Officer will prevent unauthorized persons from trespassing on Company property. He will also request assistance from The City of Baton Rouge Law Enforcement Agencies, if necessary.

Some of the duties of the Guard Officer will include:

- Direct evacuation of personnel.
- Restrict unauthorized Company personnel from the affected areas.
- Restrict unauthorized persons from Company property.
- Maintain a list of all plant personnel entering or leaving the smelter and their destination, including persons going to the hospital.
- Keep the smelter and adjacent thoroughfares clean of obstructions and unnecessary traffic.
- Direct the flow of traffic in smelter and direct incoming vehicles.
- Assist law enforcement personnel, as necessary.

The Guard Officer will place a guard at all gates of the smelter to restrict entry or open the gate either to admit authorized persons or for evacuation. The Purchasing Manager, Mr. Chris Butler, will act as the Guard Officer, he will be assisted by the contract Security Guard on duty at the time of the emergency.

2.11 Evacuation Wardens

The Wardens will be trained in the complete workplace layout and all of the escape routes and assembly areas, as shown on Figure 3. Sufficient Wardens will be available on each work shift. They will be aware of hazardous areas which should be avoided in an emergency, and will be familiar with any handicapped employees or any other employee problems which can hinder safe evacuation. Before leaving the evacuation area, Wardens are to check enclosed spaces, restrooms, isolated rooms and similar area for employees who may be trapped or otherwise unable to escape. After the desired degree of evacuation is completed, Wardens are to proceed to the assembly areas and account for or otherwise verify that all employees have safely evacuated. All shift leaders and area supervisors will be trained to act as Evacuation Wardens. The office receptionist will be responsible for head-count of all office personnel.

3.0 EMERGENCY RESPONSE

3.1 Order of Notification

If an emergency occurs during weekday hours, notification will follow the set up in the Organizational Chart (Table 1). During weekends, at night and holidays, the Shift Foreman and other supervision assigned are responsible for operation of the smelter. If an emergency occurs during off-hours, the Shift Foreman or supervisor will notify the Chief Officer and the Communication Officers. The Communication Officer will then proceed to contact all necessary

personnel. Operating personnel on duty at the time of the emergency will be assigned duties by the foreman in charge until a supervisor arrives at the smelter.

3.2 Plant Communications

During an emergency, the telephone system, intercoms, and portable 2-way radios carried by employees will be used for in-plant communication. Should these systems be inoperative, runners will be sent to the effected departments. The plant telephone system has a battery back up, in the event of a power failure. If the battery backup unit also fails, the telephone jack, located by the front door of the main office, must be used since it is not connected to the plant electricity. Additionally, a pay phone is located in the lunchroom that is not connected to plant electricity. Also in the event of a power failure, the plant intercom and paging systems will not be operable, portable radios and runners must be used.

3.2.1 Communications Center

In the event of an emergency, the Communications Center will be located in the Plant Manager's office. Communication is critical in an emergency situation. The Emergency Contingency Plan depends on expeditious mustering of all personnel involved as well as effective maintenance of communication systems during an emergency period. Portable radios shall be used for field communications between the Contingency Plan Officers and the affected area.

In the event it should become necessary to move the communications center, an alternate location such as the Change House or the Employee Parking Lot will be used.

3.2.2 Communications Failure

If plant communications are disabled during the emergency, the Contingency Plan Officers will use portable radios to conduct in-plant communications. Messengers will be assigned to the Communications Officer for use as the situation warrants. In the event of a communications failure, the messengers may be sent off-site to contact help in reestablishing communications. If more messengers are needed, the Communications Officer will recruit messengers from personnel at the assembly points.

3.2.3 Emergency Telephone Numbers

A current up-to-date listing of employee emergency notification telephone numbers and emergency services telephone numbers will be maintained at the Plant Managers office, in the Shift Foreman's office, in the CX Control Room and at the Scale House. Table 1 of this plan presents a copy of the Employee Emergency Notification Telephone list. Table 2 of this plan presents a copy of the Emergency Services Telephone List.

3.3 Evacuation and Assembly Areas

The criteria for evacuation will be determined by the Chief Officer or his designee. If there is an immediate threat to the employees, the area will be evacuated. There are three types of personnel alert systems that will be used during an evacuation to communicate with employees. They are the telephone pager system, the plant alarm system and the two-way radios. Should the Chief Officer (or his designee) determine an evacuation of an area of the plant is necessary, the following communications will occur. The Shift Supervisor and Assistant Chief Officer will communicate by two-way radio and/or telephone to the Chief Officer, the incident, their assessment and recommendation to evacuate a specified area of the plant. If the radio and telephone both fail, then personal messenger (runner) will be used. The Shift Supervisor will immediately, by two-way radio, telephone pager and intercom communication instruct all employees in the area to evacuate. All evacuations ordered in specified plant areas are to be walk-out as specified in Section 3.3.1. In conjunction with this evacuation, the Chief Officer will have engaged the activation of the plant alarm system as specified in Section 6.0. Should the Chief Officer deem it necessary to evacuate plant wide, he will engage the activation of the Plant Alarm System as specified in Section 6.0. The Communications Officer (and his designees) will correspondingly activate all other communications media (telephone, intercoms, and two-way radios) to contact all production area managers to evacuate all employees as specified in Section 3.3.1.

3.3.1 Evacuation

Evacuation of personnel from the plant is on order of the Chief Officer (or his designee) or, otherwise, when conditions obviously warrant. A windsock is useful in determining the direction of air movement in order to walk-out and evacuate "cross-wind," rather than into or down wind from escaped toxic gases. Figure 3 shows plant evacuation routes. The evacuation procedures are as follows:

1) WALK-OUT:

All persons will exit through the main plant entrance and then assemble in the designated assembly area as shown on Figure 3. Department Managers and Shift Supervisors will account for their people and report to the Assistant Chief Officer when all are present or accounted for. If there is a hazard or danger area enroute to the main entrance, employees will evacuate to the rear of the plant and assemble at the alternate assembly area, east the Battery Breaker unit, shown on Figure 3.

2) MOTOR CONVOY:

Personal vehicles. Employees evacuating by personal vehicle should use the same vehicle used to travel to and from work that day. Individual cars and car poolers will proceed to the prearranged destination (Sportsman Texaco, across from Brooklawn Driver), upon order of the Guard Officer. Dismissal will be ordered by the Guard Officer from the prearranged destination.

Company vehicles. Assigned drivers, as appointed by the Guard Officer, will assist loading of selected administrative records and special gear. When ordered by the Guard Officer, drivers of company vehicles will proceed to Sportsman Texaco, the prearranged evacuation destination with ample parking space. Dismissal will be only on order of the Guard Officer after appropriate storage arrangements have been made for plant records and special equipment.

3.3.2 Medical Evacuation

If a person is injured and requires treatment off-site, the First Aid Officer will request medical transportation, either in the form of an ambulance in emergency situations or by employee transportation. Any person requiring evacuation for medical treatment will first be decontaminated. This includes removing any contaminated clothing and showering or washing the individual. The only exceptions will be in critical or life-threatening situations. An air evacuation would be ordered by the First Aid Officer. The location of the helicopter landing site would be designated by the Plant Manager or On-Scene Commander. The helicopter would land in the parking lot. If the parking lot is not available, the helicopter would land at one of the closed landfills. The helicopter service is Acadian.

3.3.3 Assembly Areas

The Main Office Building will serve as the general headquarters during an emergency. In the event of an emergency, all Contingency Plan Officers will report to headquarters. If there is a delay in reporting, the officer will send a representative to headquarters and advise the Communications Center of their whereabouts. Employees have been assigned specific duties under this plan. These personnel will be notified of their specific duties by the Contingency Plan Officer responsible and will immediately assume these duties in the event of an emergency.

During an evacuation, all employees that are not performing Contingency Plan functions will report to the designated assembly area, located outside the main plant gate, next to the Guard Shack. An alternate assembly area east the Battery Breaker unit has been designated to be used if an emergency occurs near the front portion of the smelter, blocking access to the above assembly points. These assembly areas are shown on Figure 3.

Department Managers and Shift Supervisors will immediately account for all personnel under their direct supervision. Each supervisor will appoint an alternate to make the head count in case of his absence or if he is busy with other duties. A head count report will be made to the Assistant Chief Officer.

3.4 Rescue

The majority of personnel at the Baton Rouge smelter do not have formal training in rescue operations. Therefore, rescue operations will be performed by professional fire and rescue units from the city or parish, (see Table 2 for Emergency Telephone Numbers). If necessary, smelter personnel will assist rescue crews.

3.5 Emergency Equipment

The Safety Officer maintains a list of all emergency equipment at this facility. A copy of this list is included as Appendix D. A 3M SCBA respirator with a 30-minute air tank is located in the Safety Office. Two Scott air-line respirators are located in the Change House. Absorbent material and DOT approved drums for spill control are located in the maintenance shop. Spills will be handled following the procedures specified in Exide's Spill Prevention Control and Countermeasure (SPCC) Plan.

Personal protective equipment, including respirators (equipped with combination HEPA particulate, organic vapor and acid gas filters), ear plugs, steel-toed boots, goggles, face shields, chemical resistant gloves and suits, are kept in the changehouse. An emergency locker, stocked with extra safety supplies is located in the maintenance shop. Exide maintains a stock of fall protection harnesses and lanyards in the safety office. Two air blowers that can be used to ventilate confined spaces are located in the maintenance shop. Fire protection equipment is kept in convenient locations around the smelter. A class D fire extinguisher is kept at the phosphorus building and at the chemical warehouse. All control rooms are equipped with CO₂ fire extinguishers. The No. 1 baghouse and No. 4 baghouse each have sprinkler systems that will be used in the event of a fire at the baghouse.

3.6 Control of Access to Damaged Areas

A special guard crew under the supervision of the Guard Officer will guard all disaster areas to minimize access. If access to a damaged or shut-down area needs to be controlled, the Chief Officer will direct the Guard Officer to barricade the affected areas. Barricades will not be removed until the affected area is deemed safe and has been decontaminated.

3.7 Public Relations

Prompt, intelligent handling of the press is always important for good public relations. This is particularly so in an emergency situation. The following outlines procedures to be followed in handling such matters. The Chief Officer and the Corporate Communications Officer, Mr. Tim Yost, will handle press inquiries. Furnish a simple, clear, and accurate story of the occurrences as soon as it can be determined. Statement should include such facts as:

1. A summary of the incident, giving a description of situation.
2. Indicate the part of smelter or process involved.
3. Estimated degree of damage if extensive.
4. Indicate precautions taken. Stress the previous good experience of the company and how damage was minimized or is being prevented from spreading as result of company's safety program and emergency control procedures.

5. Outline how all of the company personnel are cooperating with fire department, police or other municipal authorities and services that may be involved.
6. Furnish simple background information on the plant's operations and history.

Do not give an indication or opinion as to the cause of the incident since insurance and personal liability aspects may be involved. If asked, a simple statement should be made that "the cause of the incident has not yet been determined, but is already under investigation."

3.8 Decontamination

After the area affected by the emergency situation has been deemed to be safe, decontamination of the area will proceed. Decontamination will include containing any spilled waste material, segregating waste materials for disposal, either by recycling in one of the plant furnaces, in the plant wastewater treatment system or by offsite disposal. The affected area will be washed down using a high-pressure washer or wash down hose. Wash down water will be treated at the water treatment unit. The Chief Officer will direct decontamination efforts. The Liaison Officer will ensure that decontamination is properly completed and that all decontamination byproducts and wash water are properly disposed of.

Personal protective equipment used during a response effort will be decontaminated and disposed of on-site according to regulatory guidelines and requirements.

4.0 TYPES OF EMERGENCY SITUATIONS

This section describes the types of emergency situations likely to be encountered at the Baton Rouge smelter and presents procedures to be followed in the event of each situation. Copies of this Contingency plan are kept on file in the Plant Safety Office, in the Plant Environmental Office, in the Plant Manager's office, in the Battery Breaker Control Room, in the Production Control Room, in the Guard House and in the facility onsite laboratory.

4.1 Natural Disasters

Natural disasters such as tornadoes and hail can affect the facility operations with little or no warning. With other natural disasters such as hurricanes and flooding there is usually some time prior to the event for planning. Exide maintains a state of constant readiness in the event of any severe weather. With the onset of possible severe weather, a current list of personnel onsite will be obtained from the supervisors and kept available if needed. The decision to shut-down the plant will be made by the Chief Officer. Evacuation orders may be given or the employees may be forced to take shelter at the smelter. Evacuations will follow the procedures listed in Section 3.3.

4.1.1 Hurricanes

Exide has a detailed hurricane preparedness program. The Baton Rouge smelter will track any hurricane or tropical storm that is present in the Gulf of Mexico. As a storm system approaches the

Louisiana coastline, a phased shutdown will be initiated based on the probability of hurricane impact. Moveable objects will be secured, non-essential personnel will be dismissed and production areas will be idled. After the storm has passed, the idled facility will be brought online, any necessary storm repairs will be made and normal operations resume.

4.1.2 Tornadoes

In case of a tornado, office personnel will take shelter under their desk. Employees outside of the office building/changehouse will shelter in the nearest bathroom or concrete block building. If it is impossible to reach shelter, employees should lay flat in a ditch.

4.2 Chemical Emergencies

Toxic materials likely to be released, protective measures, and decontamination procedures are listed in this section. Exide maintains binders that contain MSDS for all chemicals used or stored at the smelter. One set of binders is located in the Safety Office, at set is located in lab, in the Battery Breaker Unit Control Room, the Production Area Control Room and in the Guard House. Areas affected, or likely to be affected, in and out of the smelter, must be evacuated and blockaded immediately should an accidental release occur. Steps to decontaminate any affected areas will begin as soon as it is safe to proceed.

4.2.1 Acid

Sulfuric acid is stored and recycled in the facility. There is a potential for accidentally release of acid in large quantities either from the two sulfuric acid tanks located by the North doorway. Such releases would affect only the immediate area and the hazard would be confined to contact of persons with liquid. The release of acid will be controlled by neutralization with sodium hydroxide, or an application of a large volume of water to dilute the material. The fluids generated by response to an acid release will be treated at the smelter's wastewater treatment plant. Personnel responding to an acid release must wear protective equipment including rubber boots or overshoes, rain suits, face shield or, in extreme circumstances, coverall rubber suits.

4.2.2 Hazardous Material Releases

In the event of a sudden or non-sudden release of hazardous waste or hazardous waste constituents to the air, soil or surface water, the Chief Officer will identify the exact source, amount and areal extent of the release to the best extent possible. The release must be stopped immediately. Once the release has been stopped, the area in the vicinity of the release will be evaluated. Decontamination will begin once the area is deemed to be safe for activity. For employees, decontamination will include removal of contaminated clothing and showering to remove any residual lead. Equipment that has been impacted by spills will be taken to the wash rack area and pressure washed to remove any contamination. Areas or buildings requiring decontamination will be washed down, or cleaned using one of the onsite industrial sweepers.

The Liaison Office will insure that the proper regulatory authorities have been notified about the type and quantities of the release. The Baton Rouge Smelter maintains a SPCC Plan that describes in detail the spill protection, cleanup and reporting measures to be followed.

4.3 Fire

In the event of a fire, it is important to respond quickly and confine the fire to manageable limits before it progresses beyond control. Danger from debris, explosion, or building and equipment collapse can be adequately coped with by restricting employees from these areas. The Fire Officer will work with the Utilities Officer to see that plant utilities such as electricity, natural gas, and oxygen, are shut off as required. All employees have had training in incipient fire control. However, if the fire progresses to an uncontrolled stage, the local and regional fire departments will be called to respond. Exide has arrangements with the Alsen Fire Department as our first responder in a fire situation, additionally Exide has made arrangements with the Baker Fire Department as a secondary responder. Appendix A presents the local fire department arrangements.

Fire extinguishers are located though out the plant, as shown on Figure 3. All fire extinguishers are inspected and serviced monthly by the Louisiana Fire Extinguisher located in Baton Rouge, LA. Each control room is equipped with a CO₂ fire extinguisher, which should be used in the event of an electrical fire.

It is extremely important to identify the source of the fire. Flammable chemicals are used in most areas of the smelter. Many of the refining chemicals such as red phosphorus and metallic calcium are extremely flammable and fires involving such chemicals cannot be extinguished with water. Exide has Class D fire extinguishers at the phosphorus building and the chemical warehouse. A 55-gallon drum of sand is located at the phosphorus building, it should be used to smother a fire in that area. Additionally, a large sand pile is located next to the chemical warehouse. If a chemical fire begins at the warehouse, a scoop or front end loader should use the sand to smother the fire before it spreads.

The two process baghouses (No. 1 and No. 4) each have a sprinkler system, designed to stop any fires that may occur at the baghouse. If there is a fire in one of the baghouse cells, a sensor will trigger the sprinkler system and the system will automatically start. The sprinkler is designed to quickly extinguish a fire in the baghouse and prevent the spread of fire to other areas. The systems are inspected on a weekly basis.

After a fire has been extinguished, the area must be monitored to make sure that the fire does not reignite. All fire equipment will be restored after use to a ready condition. Used fire extinguishers will be held in the maintenance shop until they are replaced. No used fire extinguishers will be returned to the plant for use.

4.3.1 Flammable Gases

Flammable gases, including acetylene, propane and natural gas, could be released in quantities sufficient to create a serious hazard in the plant area adjacent to the release. The primary hazards represented here is the danger of fire and explosion. In the event of a fire, emergency measures will

be directed toward controlling the release, eliminating the ignition sources and evacuation of contaminated areas. Adjacent areas will be evacuated to prevent injury should released material ignite. Fires fed by released material should be extinguished by cutting off the source of the fuel.

4.3.2 Fire Prevention

The Baton Rouge smelter maintains a housekeeping program to minimize the accumulation of combustible, flammable and hazardous materials and residues, in order that they do not contribute to a fire. Smelter personnel are trained in the hazardous and flammable properties of the materials that are used in the processes and handle flammable chemicals with extreme caution. Access to flammable chemicals is strictly controlled.

4.4 Explosion

Explosions caused by mixing non-compatible chemicals, improper handling of explosive material or pressure buildup, can occur in several areas of the smelter. In order to prevent explosions, proper work practices and procedures must be followed by all Exide employees.

The Utilities Officers will immediately start an investigation of the cause of an explosion. Steps will be taken to prevent occurrences in any other similar vessel or piece of equipment. Any damaged lines or equipment will immediately be shut off or isolated. Affected valves and switches will be tagged out immediately.

4.5 Bomb Threat Procedure

Any person who receives a bomb threat call should get all details possible from the caller and record every word spoken by the person making the call. He will then notify the Chief Officer or the next person in order of notification as listed in this plan. If a bomb threat note is found the note is found indicating a bomb threat, the note should be taken to the Chief Officer and then forwarded to authorities.

The Chief Officer will immediately call the **State Police HAZMAT Unit, 925-6595**, who will respond. The Chief Officer will make a determination of which areas should be evacuated. The evacuation procedures described in Section 3.2 will be followed. The Plant gates will be closed and traffic controlled. Production units affected will be shut down as specified in the Section 5.0 and all flammable materials including natural gas will be cut off to these units.

Should a suspected bomb be discovered, **DO NOT TOUCH THE BOMB OR DISTURB IT IN ANY MANNER**. Notify the State Police HAZMAT Unit immediately.

5.0 PLANT OR UNIT SHUTDOWN

5.1 General

The Chief Officer or his delegate will decide whether or not a shutdown is required in any or all units. Set forth hereinafter is an outline of minimum steps required for an emergency shutdown. Detailed shutdown procedures are available in operating manuals in each control room, and in the Startup, Shutdown and Malfunction Plan.

In the event of a unit shutdown, proper lockout tagout procedures will be followed. Each production unit has a specific lockout tagout plan, and a lock station with locks, tag, hasps and other lockout supplies. The unit supervisor will first lockout the pieces of equipment necessary for a safe shutdown. Lock and tags will only be removed when the unit has been declared to be safe.

5.2 Blast Furnaces

1. Tap the remaining lead and slag,
2. Shut off the oxygen supply,
3. Pull down the air relief valve,
4. Shut down the roots blower,
5. Lower the crucible,
6. Clean shaft.

5.3 Reverberatory Furnace

1. Tap the remaining lead and slag,
2. Empty the feed belt, hopper, and dryer,
3. Switch the flue dust return,
4. Empty and shutdown the feed ram,
5. Shut down the burners,
6. Shut down the blowers for the burners.

5.4 Baghouses

When possible, it is important to delay shut down of the baghouse, since they provide a source of hygiene air aiding in protection to work force and community. If baghouse shutdown is necessary follow the procedures in the Start-up, Shutdown and Malfunction Plan:

1. Close the dampers and shut down baghouse fan,
2. Shut down the cleaning cycle and screw conveyors.

5.5 Natural Gas

The main gas shut-off valve location for the smelter is at the metering station located by the main entrance gate next to NPC's road. The Utilities Officer will be responsible for determining if natural gas needs to be shut off to a specific area of the smelter.

5.6 Electrical Power Supply

The Utilities Officers will work with the Utilities Company to restore power in the event that electricity goes down. The Maintenance Officer will arrange for motor-generator units to be placed in the most important area, if it is likely that power outage will be for considerable time. Dry cell lanterns are available from the Guard Officer to supplement the flashlights assigned to individuals. If electricity needs to be shut off or isolated from a certain portion of the smelter, the Utilities Officer will lockout and tagout the necessary circuits. Power will not be restored until the affected unit or area is cleared.

5.7 Water Supply

If an emergency situation arises that requires shutting off the plant water, the water supply main valve is located beneath the water tower. The Utilities Officer or his designate will be responsible for shutting off water during the emergency and then restoring the water once the all clear has been given.

5.8 Mobil Equipment

During an emergency all mobile equipment will be removed from the danger area to a designated location. Keys will be located at maintenance shop during normal hours and at the guard station during off hours, holidays, and weekends.

6.0 ALARM SYSTEM

In the event of an emergency, the telephone pager system is to be used to alert employees to the emergency and to give instructions on what action is to be taken. The plant alarm siren will also be used to alert employees to the emergency. If the plant alarm siren is to be used the Chief Officer or his designate will instruct one of the Contingency Plan officers to go the laboratory and sound the

alarm. Each employee should respond to instructions being given by the telephone page system. If the page system is inoperative or no instructions are given, employees are to check with their immediate supervisor for further instructions.

Siren Alarm System

BLAST	FREQUENCY	DESCRIPTION
1 LONG	CONTINUOUS	Low water alarm. Signal to supervision to check and take necessary corrective action to bring the water level in the water tower back up to operating levels.
1 SHORT	SCHEDULED BY TIMER	Notification to employees of work and break schedule.
2 SHORT	INTERMITTENT	Emergency in office or changehouse areas.
3 SHORT	INTERMITTENT	Emergency in the Shop, Lunchroom, Lab or Yard areas.
4 SHORT	INTERMITTENT	Emergency at the Production, Baghouse or Warehouse areas.
5 SHORT	INTERMITTENT	Emergency at the Battery Breaker, Dust Reverb or Water Treatment areas.
SHORT, LONG, SHORT, LONG	INTERMITTENT	Alarm signal to an emergency involving the total plant and calls for immediate evacuation of the plant. Employees are to follow supervisory instructions or report to front parking lot if no other instructions are given. The short/long blast are to be repeated several times to give notice to all employees.

Note: Alarm panel is located in the laboratory.

TABLES

TABLE 1
EMPLOYEE EMERGENCY NOTIFICATION TELEPHONE LIST

<u>NAME</u>	<u>POSITION</u>	<u>PHONE #</u>	<u>PAGER/CELL #</u>
Joe Acker	Plant Manager	(225) 673-6187	(225) 405-8190=cell
Tim Harris	Production Manager	(225) 275-7734	(225) 405-8193=cell
Mike Parker	HS&E Manager	(225) 261-????	(225) 921-8505=cell
Tommy Payne	Comptroller	(225) 753-0445	(225) 505-7622=cell
Pat Roy	Plant Engineer	(225) 638-6049	(225) 721-1402=cell
Jo Wood	Personnel Director	(225) 664-3117	
Michael Krickel	Quality Manager	(225) 753-0089	
Tony Crump	Purchasing Mgr.		
Larry Myers	Plant Superintendent		
Jerry Williams	Yard Manager	(225) 774-6951	
Robert Delmore	CX Production Manager	(225) 927-1842	
Johnny Turner	Plant Electrician	(225) 778-1097	
Noel Barnes	Production Shift Supervisor	(225) 635-9103	
Ronnie Williams	Production Shift Supervisor	(225) 658-7777	
Ronnie Fisher	Production Shift Supervisor	(601) 888-7160	
Eugene Robinson	Production Shift Supervisor		
Tyrone Perry	Shipping Supervisor	(225) 923-7698	

TABLE 2
EMERGENCY SERVICES TELEPHONE LIST

<i>CRITICAL</i>	911
MEDICAL	
Richard Hill, M.D. (Hill Medical Associates)	275-7770
<i>Primary Hospital</i>	
Lane Memorial Hospital 6300 Main St. Zachery	658-4000
<i>Burn Unit</i>	
Baton Rouge General Hospital 3600 Florida Blvd.	387-7000
<i>Secondary Hospital</i>	
Baton Rouge General Hospital 8585 Picardy Ave.	763-4000
<i>Secondary Hospital</i>	
Our Lady of the Lake Hospital 5000 Hennessy Boulevard	765-6565
<i>Primary Ambulance Service</i>	
Acadian Ambulance Service (Non Critical Injuries)	267-1111
FIRE DEPARTMENTS	
<i>Primary Responder</i>	
Alsen Fire Department	774-3473
<i>Secondary Responder</i>	
Brownsfield Fire Department	778-0344
Baker Fire Department	775-3712
Baton Rouge Fire Department (Dispatch Center)	389-4617
LAW ENFORCEMENT	
East Baton Rouge Sheriff's Office	389-5000
Scotlandville Sheriff's Office	389-5105
State Police Troop A	754-8500
HAZMAT UNIT	925-6595

Note: All area codes are 225 unless specified.

TABLE 2 (Continued)
EMERGENCY SERVICES TELEPHONE LIST

OXYGEN SERVICE

BOC (Errol Tisdale)
 Beeper

775-8075
 1-888789-7498

ELECTRICAL:

A. ENTERGY: (Primary Service)
 Wayne Criswell - Service Rep. Beeper
 Home

1-800-766-1648
 1-800-264-2535 = 8356
 1 (504) 549-6905

B. HINCKLE & McCOY (Secondary Service)
 Ronald Hopkins – Service Rep.

654-2689 Home
 921-4896 Mobile

C. Red Simpson (Secondary Service)
 Randy Henry – Service Rep.

504-733-2021
 318-487-1074

NATURAL GAS

Cypruss Gas

1-800-600-6240

MISCELLANEOUS

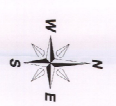
Kansas City Southern Railroad
 Custom Security (Baker Warehouse)
 CHEMTREC (Over-the-Road Chemical Spills)

379-4241
 927-5535
 1-800-523-8954

Note: All area codes are 225 unless specified.

FIGURES

3



- LEGEND:**
- CONTOUR**
 - APPROXIMATE SITE BOUNDARY**
 - WELL LOCATION**

NOTES:

1. AERIAL PHOTOGRAPHY AND TOPOGRAPHY BY DAVID STARR, AERIAL, SPRING, MAY 2003.
2. THE BOUNDARY OF THIS MAP AND THE DATA PRESENTED BY IT ARE TO BE USED FOR INFORMATIONAL PURPOSES ONLY AND NOT FOR ANY OTHER PURPOSES.
3. THIS MAP IS THE PROPERTY OF THE COMPANY AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.

EXIDE TECHNOLOGIES

BATON ROUGE, LOUISIANA

200 SCALE TOPOGRAPHIC MAP
(WITH 1,000 FT.)

Advanced Geoservices Corp.

1

DATE: 05/20/2003

BY: [Signature]

PROJECT: [Blank]

SCALE: 1" = 200'

PROJ. NO.: [Blank]

REV. NO.: [Blank]

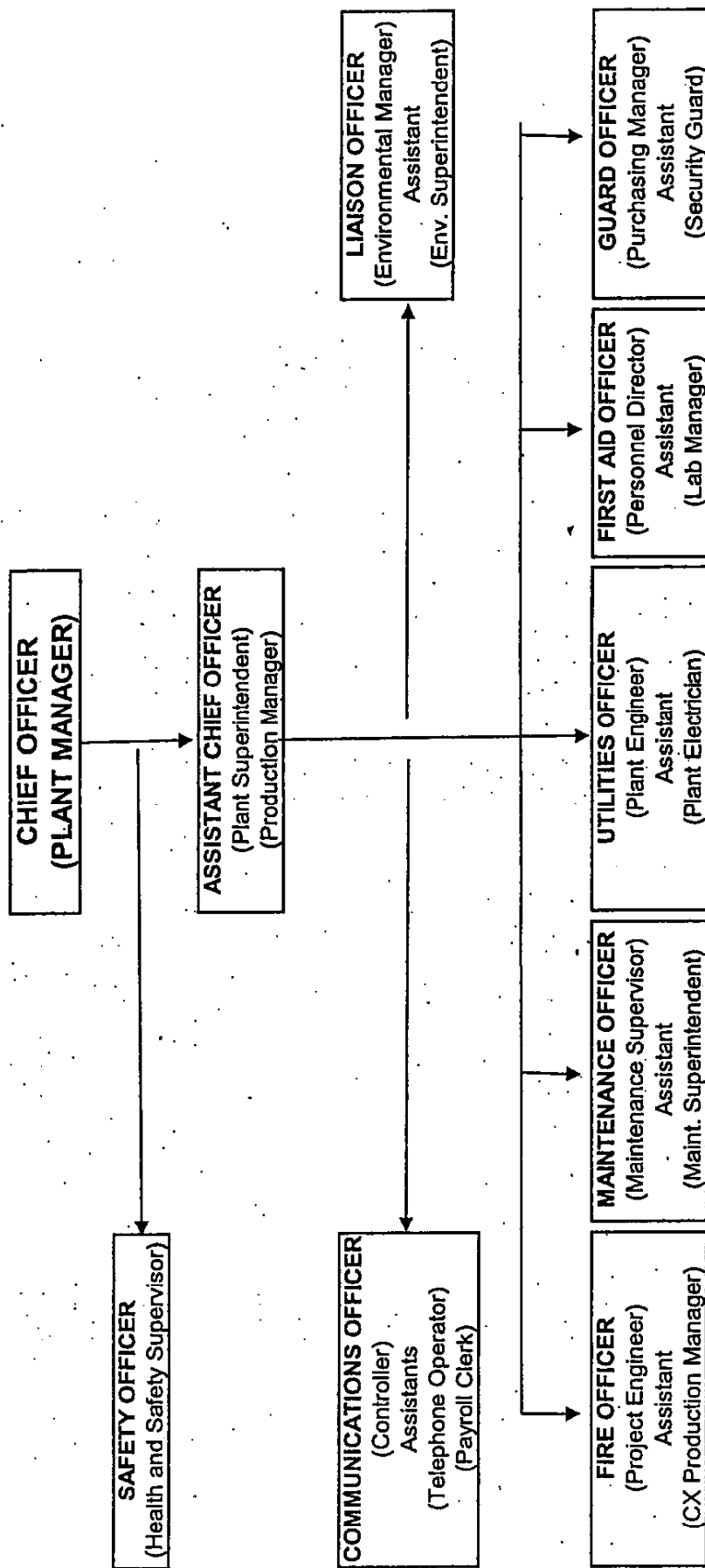
REV. DATE: [Blank]

REV. BY: [Blank]

REV. DESCRIPTION: [Blank]

FIGURE 2

EMERGENCY RESPONSE ORGANIZATIONAL CHART



APPENDIX A

ARRANGEMENTS WITH LOCAL AUTHORITIES

EXIDE TECHNOLOGIES

April 29, 2003

VIA HAND DELIVERY

Mr. Gary Lablanc
Right to Know Unit
Louisiana State Police
7901 Independence Blvd
Baton Rouge, LA 70806

RE: Exide Technologies, Baton Rouge Smelter
RCRA Contingency and Emergency Response Plan

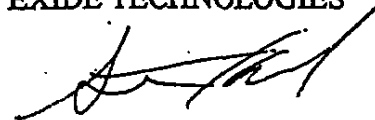
Dear Mr. Lablanc:

Enclosed please find a copy of the revised RCRA Contingency Plan and Emergency Response Plan of Exide Technologies (formerly Schuylkill Metals Corporation), Baton Rouge smelter.

The Exide Baton Rouge facility is a secondary lead smelter that recycles spent lead acid batteries and other lead-bearing material and produces metallic lead for reuse in production of Exide batteries. This Contingency Plan lists the emergency response organization and programs that are in place at the facility along with facility hazards and chemicals that are present onsite.

The plan references the State Police Hazmat unit as our emergency responder in the event of a chemical emergency or bomb threat. If you have any questions about this plan or require additional information, please call me at (225) 775-3040, ext. 142.

Sincerely,
EXIDE TECHNOLOGIES



Steve Krul
Environmental Manager

CERTIFICATION OF RECEIPT:

SIGNATURE London Dettling

DATE: 04/29/03

EXIDE TECHNOLOGIES

April 17, 2003.

VIA HAND DELIVERY

Communications Officer
Baton Rouge General Hospital
8585 Picardy Ave.
Baton Rouge, LA 70818

RE: RCRA Contingency and Emergency Response Plan
Exide Technologies, Baton Rouge Smelter

Dear Sir or Madam:

Enclosed please find one copy of the RCRA Contingency Plan and Emergency Response Plan of Exide Technologies (formerly Schuykill Metals Corporation), Baton Rouge smelter.

The Exide Baton Rouge facility is a secondary lead smelter that recycles spent lead acid batteries and other lead-bearing material and produces metallic lead for reuse in production of Exide batteries. This Contingency Plan lists the emergency response organization and programs that are in place at the facility along with facility hazards and chemicals that are present onsite.

The plan references the Baton Rouge General Hospital as one of the Emergency Medical facilities that may be used by Exide. If you have any questions about this plan or require additional information, please call me at (225) 775-3040, ext. 142.

Sincerely,
EXIDE TECHNOLOGIES



Steve Krul
Environmental Manager

CERTIFICATION OF RECEIPT:

SIGNATURE: Dindy Duren

DATE: 4/23/03

EXIDE TECHNOLOGIES

April 17, 2003

VIA HAND DELIVERY

Communications Officer
Baton Rouge General Hospital
3600 Florida Blvd.
Baton Rouge, LA 70818

RE: RCRA Contingency and Emergency Response Plan
Exide Technologies, Baton Rouge Smelter

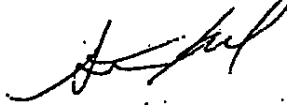
Dear Sir or Madam:

Enclosed please find one copy of the RCRA Contingency Plan and Emergency Response Plan of Exide Technologies (formerly Schuylkill Metals Corporation), Baton Rouge smelter.

The Exide Baton Rouge facility is a secondary lead smelter that recycles spent lead acid batteries and other lead-bearing material and produces metallic lead for reuse in production of Exide batteries. This Contingency Plan lists the emergency response organization and programs that are in place at the facility along with facility hazards and chemicals that are present onsite.

The plan references the Baton Rouge General Hospital as one of the Emergency Medical facilities that may be used by Exide. If you have any questions about this plan or require additional information, please call me at (225) 775-3040, ext. 142.

Sincerely,
EXIDE TECHNOLOGIES



Steve Krul
Environmental Manager

CERTIFICATION OF RECEIPT:

SIGNATURE: 

DATE: 4/23/03

EXIDE TECHNOLOGIES

April 17, 2003

VIA HAND DELIVERY

Communications Officer
Our Lady of the Lake Hospital
5000 Hennessy Blvd.
Baton Rouge, LA 70818

RE: RCRA Contingency and Emergency Response Plan
Exide Technologies, Baton Rouge Smelter

Dear Sir or Madam:

Enclosed please find one copy of the RCRA Contingency Plan and Emergency Response Plan of Exide Technologies (formerly Schuykill Metals Corporation), Baton Rouge smelter.

The Exide Baton Rouge facility is a secondary lead smelter that recycles spent lead acid batteries and other lead-bearing material and produces metallic lead for reuse in production of Exide batteries. This Contingency Plan lists the emergency response organization and programs that are in place at the facility along with facility hazards and chemicals that are present onsite.

The plan references Our Lady of the Lake Hospital as one of the Emergency Medical facilities that may be used by Exide. If you have any questions about this plan or require additional information, please call me at (225) 775-3040, ext. 142.

Sincerely,
EXIDE TECHNOLOGIES


Steve Krul
Environmental Manager

CERTIFICATION OF RECEIPT:

SIGNATURE: 

DATE: 4-23-03

EXIDE TECHNOLOGIES

April 17, 2003

VIA HAND DELIVERY

Fire Chief
Baker Fire Department
Groom Rd Station
Baker, LA

RE: RCRA Contingency and Emergency Response Plan
Exide Technologies, Baton Rouge Smelter

Dear Sir:

Enclosed please find a copy of the RCRA Contingency Plan and Emergency Response Plan of Exide Technologies (formerly Schuylkill Metals Corporation), Baton Rouge smelter.

The Exide Baton Rouge facility is a secondary lead smelter that recycles spent lead acid batteries and other lead-bearing material and produces metallic lead for reuse in production of Exide batteries. This Contingency Plan lists the emergency response organization and programs that are in place at the facility along with facility hazards and chemicals that are present onsite.


The plan references the Baker Fire Department as a secondary fire department responder in the event of a fire or emergency at Exide. If you have any questions about this plan or require additional information, please call me at (225) 775-3040, ext. 142.

Sincerely,
EXIDE TECHNOLOGIES



Steve Krul
Environmental Manager

CERTIFICATION OF RECEIPT:

SIGNATURE: 

DATE: 4-24-03

EXIDE TECHNOLOGIES

April 17, 2003

VIA HAND DELIVERY

Fire Chief
Alsen Fire Department
Alsen Station
Baker, LA

RE: RCRA Contingency and Emergency Response Plan
Exide Technologies, Baton Rouge Smelter

Dear Sir:

Enclosed please find a copy of the RCRA Contingency Plan and Emergency Response Plan of Exide Technologies (formerly Schuylkill Metals Corporation), Baton Rouge smelter.

The Exide Baton Rouge facility is a secondary lead smelter that recycles spent lead acid batteries and other lead-bearing material and produces metallic lead for reuse in production of Exide batteries. This Contingency Plan lists the emergency response organization and programs that are in place at the facility along with facility hazards and chemicals that are present onsite.

The plan references the Alsen Fire Department as the primary fire department responder in the event of a fire or emergency at Exide. If you have any questions about this plan or require additional information, please call me at (225) 775-3040, ext. 142.

Sincerely,
EXIDE TECHNOLOGIES



Steve Krul
Environmental Manager

CERTIFICATION OF RECEIPT:

SIGNATURE: Robert B. Johnson DATE: 04-22-03

EXIDE TECHNOLOGIES

April 17, 2003.

VIA HAND DELIVERY

Communications Officer
Lane Memorial Hospital
6300 Main Street
Zachary, LA 70791

RE: RCRA Contingency and Emergency Response Plan
Exide Technologies, Baton Rouge Smelter

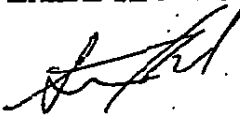
Dear Sir or Madam:

Enclosed please find one copy of the RCRA Contingency Plan and Emergency Response Plan of Exide Technologies (formerly Schuylkill Metals Corporation), Baton Rouge smelter.

The Exide Baton Rouge facility is a secondary lead smelter that recycles spent lead-acid batteries and other lead-bearing material and produces metallic lead for reuse in production of Exide batteries. This Contingency Plan lists the emergency response organization and programs that are in place at the facility along with facility hazards and chemicals that are present onsite.

The plan references the Lane Memorial Hospital as our primary Emergency Medical facility. If you have any questions about this plan or require additional information, please call me at (225) 775-3040, ext. 142.

Sincerely,
EXIDE TECHNOLOGIES


Steve Krul
Environmental Manager

CERTIFICATION OF RECEIPT:

SIGNATURE: Helen Sexton

DATE: 4-24-03

APPENDIX B

TIER TWO REPORT

TIER III

LOUISIANA CHEMICAL NETWORK

Facility Report

Home

Facility
Information

Help

Click your browser's "Print" icon to print this page.

*** Wed Feb 26 16:15:35 CST 2003 ***

*** Facility Identification ***

Facility Name EXIDE TECHNOLOGIES
Facility ID 365
Facility Type Fixed
Physical Address 2400 BROOKLAWN DRIVE
BATON ROUGE LA, 70807-2400
EAST BATON ROUGE PARISH
Mailing Address PO BOX 74040
BATON ROUGE LA, 70874

Reporting Period January 1 to December 31, 2002
Status Active

SIC Code 3341
Dun & Bradstreet # 942384520

*** Owner Information ***

Company Name EXIDE TECHNOLOGIES
Mailing Address 210 CARNEGIE CENTER SUITE 500
PRINCETON NJ, 08540
Phone 601-921-4015
Fax 601-921-4062
Email

*** Emergency Contact ***

Name JOSEPH ACKER
Title PLANT MANAGER
Phone 225-775-3040 Ext. 127
24Hr Phone 225-775-3040
Pager 225-935-8117
Fax 225-775-3057
Cell Phone
Email

*** Emergency Contact ***

Name STEVEN A KRUL
Title ENVIRONMENTAL MANAGER
Phone 225-775-3040 Ext. 142
24Hr Phone 225-775-3040
Pager 225-935-8126
Fax 225-775-3057
Cell Phone
Email KRULSA@EXIDE.COM

* * * Filing Information * * *
Ready for filing Yes

* * * Pure Chemical Description * * *

CAS # 74862
Proper Name ACETYLENE
Chemical State Liquid
EHS ? No
Last Reviewed Date 02/24/2003

* * * Hazards * * *
Physical Fire
Sudden Release of Pressure
Health Immediate (Acute)
Reportable Quantity 100 Lbs.

* * * Inventory * * *
Max Daily Amount 9999
Avg Daily Amount 9999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Cylinder
Pressure Greater than ambient
Temperature Ambient
Location MAINTENANCE SHOP
Confidential No
Location

Container Type(s) Cylinder
Pressure Greater than ambient
Temperature Ambient
Location UBIQUITOUS-PORTABLE UNITS
Confidential No
Location

* * * Pure Chemical Description * * *

CAS # 7429905
Proper Name ALUMINUM METAL
Chemical State Solid
EHS ? No
Last Reviewed Date 02/24/2003

* * * Hazards * * *
Physical -Not Provided-
Health Immediate (Acute)
Delayed (Chronic)
Reportable Quantity 5000 Lbs.

* * * Inventory * * *
Max Daily Amount 999
Avg Daily Amount 999

Days On Site 365

*** Storage Types and Storage Locations ***

Container Type(s) Box
Pressure Ambient
Temperature Ambient
Location CHEMICAL WAREHOUSE
Confidential No
Location

*** Pure Chemical Description ***

CAS # 7440360
Proper Name ANTIMONY METAL
Chemical State Solid
EHS ? No
Last Reviewed Date 02/24/2003

*** Hazards ***

Physical -Not Provided-
Health Immediate (Acute)
Delayed (Chronic)
Reportable Quantity 5000 Lbs.

*** Inventory ***

Max Daily Amount 999999
Avg Daily Amount 999999
Days On Site 365

*** Storage Types and Storage Locations ***

Container Type(s) Box
Pressure Ambient
Temperature Ambient
Location CHEMICAL WAREHOUSE
Confidential No
Location

*** Pure Chemical Description ***

CAS # 7440382
Proper Name ARSENIC METAL
Chemical State Solid
EHS ? No
Last Reviewed Date 02/24/2003

*** Hazards ***

Physical Reactivity
Health Immediate (Acute)
Delayed (Chronic)
Reportable Quantity 5000 Lbs.

*** Inventory ***

Max Daily Amount 9999
Avg Daily Amount 999

Days On Site 365

*** Storage Types and Storage Locations ***

Container Type(s) Steel Drum
Pressure Ambient
Temperature Ambient
Location CHEMICAL WAREHOUSE
Confidential No
Location

*** Pure Chemical Description ***

CAS # 1327533
Proper Name ARSENIC TRIOXIDE
Chemical State Solid
EHS ? No
Last Reviewed Date 02/24/2003

*** Hazards ***

Physical -Not Provided-
Health Immediate (Acute)
Delayed (Chronic)
Reportable Quantity 5000 Lbs.

*** Inventory ***

Max Daily Amount 999
Avg Daily Amount 999
Days On Site 365

*** Storage Types and Storage Locations ***

Container Type(s) Steel Drum
Pressure Ambient
Temperature Ambient
Location CHEMICAL WAREHOUSE
Confidential No
Location

*** Chemical Mixture Description ***

Trade Name BATTERIES
Common Name BATTERIES, LEAD ACID
Chemical State Solid
Last Reviewed Date 02/24/2003

*** EPA Information ***

Trade Secret & No
Approved by EPA?

*** Mixture Components ***

Proper Chemical LEAD
CAS# 7439921 53%

Proper Chemical ELECTROLYTE (SULFURIC ACID AND WATER)
CAS# 7664939 40% EHS

Proper Chemical POLY PROPYLENE
CAS# 9003070 6%

* * * Hazards * * *

Physical Fire
 Reactivity
Health Immediate (Acute)
 Delayed (Chronic)
Reportable Quantity 1000 Lbs.

* * * Inventory * * *

Max Daily Amount 9999999
Avg Daily Amount 9999999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Other
Pressure Ambient
Temperature Ambient
Location TRUCK/TRAILER STORAGE AREA
Confidential No
Location

Container Type(s) Other
Pressure Ambient
Temperature Ambient
Location WHOLE BATTERY STORAGE AREA
Confidential No
Location

Container Type(s) Other
Pressure Ambient
Temperature Ambient
Location CK BATTERY BREAKER BUILDING
Confidential No
Location

* * * Chemical Mixture Description * * *

Trade Name BATTERY FLUID
Common Name ELECTROLYTE
Chemical State Liquid
Last Reviewed Date 02/24/2003

* * * EPA Information * * *

Trade Secret & No
Approved by EPA?

* * * Mixture Components * * *

Proper Chemical SULFURIC ACID
CAS# 7664939 25% EHS

Proper Chemical WATER
CAS# 7732185 85%

* * * Hazards * * *

Physical Reactivity
Health Immediate (Acute)
 Delayed (Chronic)
Reportable Quantity 1000 Lbs.

* * * Inventory * * *

Max Daily Amount 999999
Avg Daily Amount 99999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Tank Inside Building
Pressure Ambient
Temperature Ambient
Location TANKS-CX BATTERY BREAKER BUILDING
Confidential No
Location

Container Type(s) Above Ground tank
Pressure Ambient
Temperature Ambient
Location SULFURIC ACID STORAGE TANKS
Confidential No
Location

* * * Pure Chemical Description * * *

CAS # 10043524
Proper Name CALCIUM CHLORIDE
Chemical State Solid
EHS ? No
Last Reviewed Date 02/24/2003

* * * Hazards * * *

Physical -Not Provided-
Health Delayed (Chronic)
Reportable Quantity 5000 Lbs.

* * * Inventory * * *

Max Daily Amount 9999
Avg Daily Amount 9999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Bag
Pressure Ambient
Temperature Ambient
Location CHEMICAL WAREHOUSE
Confidential No
Location

* * * Pure Chemical Description * * *

CAS # 1305620
Proper Name CALCIUM HYDROXIDE (LIME)
Chemical State Solid
EHS ? No
Last Reviewed Date 02/24/2003

*** Hazards ***

Physical Reactivity
Health Immediate (Acute)
Delayed (Chronic)
Reportable Quantity 5000 Lbs.

*** Inventory ***

Max Daily Amount 9999
Avg Daily Amount 999
Days On Site 365

*** Storage Types and Storage Locations ***

Container Type(s) Tank Inside Building
Pressure Ambient
Temperature Ambient
Location WATER TREATMENT UNIT
Confidential No
Location

Container Type(s) Bag
Pressure Ambient
Temperature Ambient
Location WATER TREATMENT UNIT
Confidential No
Location

Container Type(s) Bag
Pressure Ambient
Temperature Ambient
Location CHEMICAL WAREHOUSE
Confidential No
Location

Container Type(s) Bag
Pressure Ambient
Temperature Ambient
Location CX BATTERY BREAKER
Confidential No
Location

*** Pure Chemical Description ***

CAS # 7440702
Proper Name CALCIUM METAL
Chemical State Solid
EHS ? No
Last Reviewed Date 02/24/2003

*** Hazards ***

Physical Fire

Health Reactivity
 Immediate (Acute)
 Delayed (Chronic)
Reportable Quantity 5000 Lbs.

* * * Inventory * * *

Max Daily Amount 99999
Avg Daily Amount 9999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Steel Drum
Pressure Ambient
Temperature Ambient
Location CONTAINMENT BUILDING
Confidential No
Location

Container Type(s) Steel Drum
Pressure Ambient
Temperature Ambient
Location CHEMICAL WAREHOUSE
Confidential No
Location

* * * Pure Chemical Description * * *

CAS # 7782505
Proper Name CHLORINE
Chemical State Gas
EHS ? Yes
Last Reviewed Date 02/26/2003

* * * Hazards * * *

Physical Sudden Release of Pressure
 Reactivity
Health Immediate (Acute)
 Delayed (Chronic)
Reportable Quantity 10 Lbs.

* * * Inventory * * *

Max Daily Amount 999
Avg Daily Amount 999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Cylinder
Pressure Greater than ambient
Temperature Ambient
Location CHLORINATION BUILDING AT WELL NO. 3
Confidential No
Location

* * * Pure Chemical Description * * *

CAS # 65996772
Proper Name COKE, METALLURGICAL
Chemical State Solid
EHS ? No
Last Reviewed Date 02/24/2003

* * * Hazards * * *

Physical -Not Provided-
Health Delayed (Chronic)
Reportable Quantity 5000 Lbs.

* * * Inventory * * *

Max Daily Amount 99999
Avg Daily Amount 9999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Other
Pressure Ambient
Temperature Ambient
Location COKE HOPPER
Confidential No
Location

Container Type(s) Other
Pressure Ambient
Temperature Ambient
Location BINS IN CONTAINMENT BUILDING
Confidential No
Location

* * * Pure Chemical Description * * *

CAS # 7440371
Proper Name COMPRESSED ARGON
Chemical State Gas
EHS ? No
Last Reviewed Date 02/24/2003

* * * Hazards * * *

Physical Sudden Release of Pressure
Health Immediate (Acute)
Reportable Quantity 100 Lbs.

* * * Inventory * * *

Max Daily Amount 9999
Avg Daily Amount 9999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Cylinder
Pressure Greater than ambient
Temperature Ambient
Location LABORATORY
Confidential No

Location

* * * Chemical Mixture Description * * *

Trade Name DIESEL FUEL #2
Common Name DIESEL FUEL
Chemical State Liquid
Last Reviewed Date 02/24/2003

* * * EPA Information * * *

Trade Secret & No
Approved by EPA?

* * * Mixture Components * * *

Proper Chemical CUMENE
CAS# 98828 3%

Proper Chemical BENZENE
CAS# 71432 3%

* * * Hazards * * *

Physical Fire
Health Immediate (Acute)
 Delayed (Chronic)

Reportable Quantity 100 lbs.

* * * Inventory * * *

Max Daily Amount 99999
Avg Daily Amount 9999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Above Ground tank
Pressure Ambient
Temperature Ambient
Location TANK EAST OF OFFICE BUILDING
Confidential No
Location

Container Type(s) Above Ground tank
Pressure Ambient
Temperature Ambient
Location TANK AT SLAG CRUSHER
Confidential No
Location

* * * Pure Chemical Description * * *

CAS # 10028225
Proper Name FERRIC SULFATE
Chemical State Liquid
EHS ? No
Last Reviewed Date 02/24/2003

*** Hazards ***

Physical Reactivity
Health Immediate (Acute)
 Delayed (Chronic)
Reportable Quantity 500 Lbs.

*** Inventory ***

Max Daily Amount 9999
Avg Daily Amount 999
Days On Site 365

*** Storage Types and Storage Locations ***

Container Type(s) Plastic or non-metallic drum
Pressure Ambient
Temperature Ambient
Location CX BATTERY BREAKER BUILDING
Confidential No
Location

Container Type(s) Plastic or non-metallic drum
Pressure Ambient
Temperature Ambient
Location WATER TREATMENT UNIT
Confidential No
Location

*** Pure Chemical Description ***

CAS # 8006619
Proper Name GASOLINE
Chemical State Liquid
EHS ? No
Last Reviewed Date 02/24/2003

*** Hazards ***

Physical Fire
Health Immediate (Acute)
 Delayed (Chronic)
Reportable Quantity 100 Lbs.

*** Inventory ***

Max Daily Amount 9999
Avg Daily Amount 9999
Days On Site 365

*** Storage Types and Storage Locations ***

Container Type(s) Above Ground tank
Pressure Ambient
Temperature Ambient
Location TANK EAST OF OFFICE BUILDING
Confidential No
Location

*** Pure Chemical Description ***

CAS # 7647010
Proper Name HYDROCHLORIC ACID
Chemical State Liquid
EHS ? No
Last Reviewed Date 02/24/2003

*** Hazards ***

Physical Reactivity
Health Immediate (Acute)
Delayed (Chronic)
Reportable Quantity 500 Lbs.

*** Inventory ***

Max Daily Amount 999
Avg Daily Amount 999
Days On Site 365

*** Storage Types and Storage Locations ***

Container Type(s) Plastic or non-metallic drum
Pressure Ambient
Temperature Ambient
Location WATER TREATMENT UNIT
Confidential No
Location

*** Pure Chemical Description ***

CAS # 7722841
Proper Name HYDROGEN PEROXIDE
Chemical State Liquid
EHS ? No
Last Reviewed Date 02/24/2003

*** Hazards ***

Physical Reactivity
Health Delayed (Chronic)
Reportable Quantity 1000 Lbs.

*** Inventory ***

Max Daily Amount 9999
Avg Daily Amount 999
Days On Site 365

*** Storage Types and Storage Locations ***

Container Type(s) Steel Drum
Pressure Ambient
Temperature Ambient
Location BATTERY BREAKER UNIT
Confidential No
Location

Container Type(s) Steel Drum
Pressure Ambient
Temperature Ambient
Location CHEMICAL WAREHOUSE

Confidential
Location

No

* * * Pure Chemical Description * * *

CAS # 1309360
Proper Name IRON PYRITE
Chemical State Solid
EHS ? No
Last Reviewed Date 02/24/2003

* * * Hazards * * *

Physical -Not Provided-
Health Delayed (Chronic)
Reportable Quantity 5000 Lbs.

* * * Inventory * * *

Max Daily Amount 9999
Avg Daily Amount 999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Bag
Pressure Ambient
Temperature Ambient
Location CHEMICAL WAREHOUSE
Confidential No
Location

* * * Pure Chemical Description * * *

CAS # 69029523
Proper Name LEAD DROSS
Chemical State Solid
EHS ? No
Last Reviewed Date 02/24/2003

* * * Hazards * * *

Physical Reactivity
Health Immediate (Acute)
Delayed (Chronic)
Reportable Quantity 5000 Lbs.

* * * Inventory * * *

Max Daily Amount 999999
Avg Daily Amount 999999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Other
Pressure Ambient
Temperature Ambient
Location CONTAINMENT BUILDING
Confidential No

Location

* * * Pure Chemical Description * * *

CAS # 7439921
Proper Name LEAD, METAL, INORGANIC
Chemical State Solid
EHS ? No
Last Reviewed Date 02/24/2003

* * * Hazards * * *

Physical -Not Provided-
Health Immediate (Acute)
Delayed (Chronic)

Reportable Quantity 5000 Lbs.

* * * Inventory * * *

Max Daily Amount 9999999
Avg Daily Amount 9999999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Other
Pressure Ambient
Temperature Ambient
Location CONTAINMENT BUILDING
Confidential No
Location

Container Type(s) Other
Pressure Ambient
Temperature Ambient
Location PRODUCT STORAGE WAREHOUSE
Confidential No
Location

* * * Chemical Mixture Description * * *

Trade Name NATURAL GAS
Common Name NON-LIQUID HYDROCARBON GAS
Chemical State Gas
Last Reviewed Date 02/24/2003

* * * EPA Information * * *

Trade Secret & No
Approved by EPA?

* * * Mixture Components * * *

Proper Chemical METHANE
CAS# 74828 95%

Proper Chemical ETHANE
CAS# 74840 5%

Proper Chemical PROPANE

CAS#

74986

5%

* * * Hazards * * *

Physical Fire
Health Immediate (Acute)
Reportable Quantity 100 Lbs.

* * * Inventory * * *

Max Daily Amount 9999
Avg Daily Amount 9999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Other
Pressure Greater than ambient
Temperature Ambient
Location UBIQUITOUS IN PLANT
Confidential No
Location

* * * Pure Chemical Description * * *

CAS # 7782447
Proper Name OXYGEN
Chemical State Gas
EHS ? No
Last Reviewed Date 02/24/2003

* * * Hazards * * *

Physical Fire
Sudden Release of Pressure
Health Immediate (Acute)
Reportable Quantity 100 Lbs.

* * * Inventory * * *

Max Daily Amount 999999
Avg Daily Amount 999999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Above Ground tank
Pressure Greater than ambient
Temperature Cryogenic
Location OXYGEN UNIT WEST OF CHANGE HOUSE
Confidential No
Location

Container Type(s) Cylinder
Pressure Greater than ambient
Temperature Ambient
Location MAINTENANCE SHOP
Confidential No
Location

Container Type(s) Cylinder

Pressure	Greater than ambient
Temperature	Ambient
Location	UBIQUITOUS PORTABLE UNITS
Confidential	No
Location	

Container Type(s)	Other
Pressure	Greater than ambient
Temperature	Ambient
Location	UBIQUITOUS PLANT PIPING
Confidential	No
Location	

* * * Pure Chemical Description * * *

CAS #	65997151
Proper Name	PORTLAND CEMENT
Chemical State	Solid
EHS ?	No
Last Reviewed Date	02/24/2003

* * * Hazards * * *

Physical	Reactivity
Health	Immediate (Acute)
	Delayed (Chronic)

Reportable Quantity 5000 Lbs.

* * * Inventory * * *

Max Daily Amount	999999
Avg Daily Amount	99999
Days On Site	365

* * * Storage Types and Storage Locations * * *

Container Type(s)	Silo
Pressure	Ambient
Temperature	Ambient
Location	CEMENT HOPPERS
Confidential	No
Location	

* * * Pure Chemical Description * * *

CAS #	1310583
Proper Name	POTASSIUM HYDROXIDE
Chemical State	Solid
EHS ?	No
Last Reviewed Date	02/24/2003

* * * Hazards * * *

Physical	Reactivity
Health	Immediate (Acute)
	Delayed (Chronic)

Reportable Quantity 5000 Lbs.

* * * Inventory * * *

Max Daily Amount 99999
Avg Daily Amount 9999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Steel Drum
Pressure Ambient
Temperature Ambient
Location CHEMICAL WAREHOUSE
Confidential No
Location

* * * Pure Chemical Description * * *

CAS # 74986
Proper Name PROPANE GAS
Chemical State Gas
EHS ? No
Last Reviewed Date 02/24/2003

* * * Hazards * * *

Physical Fire
Sudden Release of Pressure
Health Immediate (Acute)
Reportable Quantity 100 Lbs.

* * * Inventory * * *

Max Daily Amount 99999
Avg Daily Amount 9999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Above Ground tank
Cylinder
Pressure Greater than ambient
Temperature Ambient
Location RACK AT MAINTENANCE SHOP
Confidential No
Location

Container Type(s) Cylinder
Pressure Greater than ambient
Temperature Ambient
Location RACK AT BATTERY BREAKER UNIT
Confidential No
Location

* * * Pure Chemical Description * * *

CAS # 7723140
Proper Name RED PHOSPHORUS
Chemical State Solid
EHS ? No
Last Reviewed Date 02/24/2003

* * * Hazards * * *

Physical Fire
 Reactivity
Health Immediate (Acute)
 Delayed (Chronic)
Reportable Quantity 1 Lbs.

* * * Inventory * * *

Max Daily Amount 9999
Avg Daily Amount 999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Steel Drum
Pressure Ambient
Temperature Ambient
Location PHOSPHORUS STORAGE BUILDING
Confidential No
Location

* * * Pure Chemical Description * * *

CAS # 7782492
Proper Name SELENIUM METAL
Chemical State Solid
EHS ? No
Last Reviewed Date 02/24/2003

* * * Hazards * * *

Physical Fire
Health Immediate (Acute)
 Delayed (Chronic)
Reportable Quantity 5000 Lbs.

* * * Inventory * * *

Max Daily Amount 9999
Avg Daily Amount 999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Plastic or non-metallic drum
Pressure Ambient
Temperature Ambient
Location CHEMICAL WAREHOUSE
Confidential No
Location

* * * Pure Chemical Description * * *

CAS # 497198
Proper Name SODIUM CARBONATE
Chemical State Solid
EHS ? No

Last Reviewed Date 02/24/2003

*** Hazards ***

Physical Reactivity
Health Immediate (Acute)
 Delayed (Chronic)

Reportable Quantity 5000 Lbs.

*** Inventory ***

Max Daily Amount 9999
Avg Daily Amount 999
Days On Site 365

*** Storage Types and Storage Locations ***

Container Type(s) Bag
Pressure Ambient
Temperature Ambient
Location CHEMICAL WAREHOUSE
Confidential No
Location

*** Pure Chemical Description ***

CAS # 1310732
Proper Name SODIUM HYDROXIDE
Chemical State Liquid
EHS ? No
Last Reviewed Date 02/24/2003

*** Hazards ***

Physical Reactivity
Health Immediate (Acute)
 Delayed (Chronic)

Reportable Quantity 500 Lbs.

*** Inventory ***

Max Daily Amount 99999
Avg Daily Amount 9999
Days On Site 365

*** Storage Types and Storage Locations ***

Container Type(s) Tank Inside Building
Pressure Ambient
Temperature Ambient
Location TANKS AT BATTERY BREAKER UNIT
Confidential No
Location

*** Pure Chemical Description ***

CAS # 7631994
Proper Name SODIUM NITRATE
Chemical State Solid
EHS ? No

Last Reviewed Date 02/24/2003

*** Hazards ***

Physical Fire
Reactivity
Health Immediate (Acute)
Delayed (Chronic)
Reportable Quantity 5000 Lbs.

*** Inventory ***

Max Daily Amount 99999
Avg Daily Amount 9999
Days On Site 365

*** Storage Types and Storage Locations ***

Container Type(s) Bag
Pressure Ambient
Temperature Ambient
Location CHEMICAL WAREHOUSE
Confidential No
Location

Container Type(s) Bag
Pressure Ambient
Temperature Ambient
Location CONTAINMENT BUILDING
Confidential No
Location

*** Pure Chemical Description ***

CAS # 1344098
Proper Name SODIUM SILICATE
Chemical State Liquid
EHS ? No
Last Reviewed Date 02/24/2003

*** Hazards ***

Physical -Not Provided-
Health Immediate (Acute)
Reportable Quantity 500 Lbs.

*** Inventory ***

Max Daily Amount 9999
Avg Daily Amount 9999
Days On Site 365

*** Storage Types and Storage Locations ***

Container Type(s) Tote Bin
Pressure Ambient
Temperature Ambient
Location SLAG STABILIZATION AREA
Confidential No
Location

* * * Pure Chemical Description * * *

CAS # 7757826
Proper Name SODIUM SULFATE
Chemical State Solid
EHS ? No
Last Reviewed Date 02/24/2003

* * * Hazards * * *

Physical -Not Provided-
Health Delayed (Chronic)
Reportable Quantity 5000 Lbs.

* * * Inventory * * *

Max Daily Amount 999999
Avg Daily Amount 99999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Tank Inside Building
Pressure Ambient
Temperature Ambient
Location CX BATTERY BREAKER UNIT
Confidential No
Location

Container Type(s) Silo
Pressure Ambient
Temperature Ambient
Location SALT SILO EAST OF CX UNIT
Confidential No
Location

Container Type(s) Rail car
Pressure Ambient
Temperature Ambient
Location RAIL SPUR
Confidential No
Location

* * * Pure Chemical Description * * *

CAS # 1313822
Proper Name SODIUM SULFIDE
Chemical State Solid
EHS ? No
Last Reviewed Date 02/24/2003

* * * Hazards * * *

Physical -Not Provided-
Health Delayed (Chronic)
Reportable Quantity 5000 Lbs.

* * * Inventory * * *

Max Daily Amount 9999
Avg Daily Amount 999

Days On Site 365

*** Storage Types and Storage Locations ***

Container Type(s) Bag
Pressure Ambient
Temperature Ambient
Location CHEMICAL WAREHOUSE
Confidential No
Location

*** Pure Chemical Description ***

CAS # 7704349
Proper Name SULFUR
Chemical State Solid
EHS ? No
Last Reviewed Date 02/24/2003

*** Hazards ***

Physical Fire
Reactivity
Health Immediate (Acute)
Delayed (Chronic)
Reportable Quantity 5000 Lbs.

*** Inventory ***

Max Daily Amount 99999
Avg Daily Amount 9999
Days On Site 365

*** Storage Types and Storage Locations ***

Container Type(s) Bag
Pressure Ambient
Temperature Ambient
Location CHEMICAL WAREHOUSE
Confidential No
Location

*** Chemical Mixture Description ***

Trade Name TIN DROSS
Common Name TIN DROSS
Chemical State Solid
Last Reviewed Date 02/24/2003

*** EPA Information ***

Trade Secret & No
Approved by EPA?

*** Mixture Components ***

Proper Chemical LEAD
CAS# 7439921 80%

Proper Chemical TIN

CAS# 7440315 12%
Proper Chemical ANTIMONY
CAS# 7440360 5%
Proper Chemical COPPER
CAS# 7440508 1%
Proper Chemical ARSENIC
CAS# 7440382 1%
Proper Chemical SILVER
CAS# 7440224 1%

* * * Hazards * * *

Physical -Not Provided-
Health Delayed (Chronic)
Reportable Quantity 5000 Lbs.

* * * Inventory * * *

Max Daily Amount 9999
Avg Daily Amount 9999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Steel Drum
Pressure Ambient
Temperature Ambient
Location CONTAINMENT BUILDING
Confidential No
Location

* * * Pure Chemical Description * * *

CAS # 7440315
Proper Name TIN, METAL
Chemical State Solid
EHS ? No
Last Reviewed Date 02/24/2003

* * * Hazards * * *

Physical -Not Provided-
Health Delayed (Chronic)
Reportable Quantity 5000 Lbs.

* * * Inventory * * *

Max Daily Amount 9999
Avg Daily Amount 9999
Days On Site 365

* * * Storage Types and Storage Locations * * *

Container Type(s) Box
Pressure Ambient
Temperature Ambient
Location CHEMICAL WAREHOUSE

APPENDIX C

MSDS SHEETS FOR PRODUCTS PRODUCED AT THE BATON ROUGE SMELTER

SCHUYLKILL METALS

A Division of Exide Corporation

MATERIAL SAFETY DATA SHEET

SOFT LEAD GENERAL INFORMATION

TRADE NAME (COMMON NAME OR SYNONYM)	DATE ISSUED	DATE REVISED
Soft lead, corroding grade lead, pure lead	2-4-85	10-1-96
MANUFACTURER'S CONTACT SCHUYLKILL METALS P.O. Box 74040 Baton Rouge, Louisiana 70874 Telephone: 504-775-3040		

INGREDIENTS

MATERIAL OR COMPONENT	C.A.S. #	WEIGHT %	PERMISSIBLE AIR LIMITS
Lead *ACGIH **OSHA	7439-92-1	99.7+%	0.15 mg/meter ³ * 0.05 mg/meter ³ **

PHYSICAL DATA

APPEARANCE AND ODOR Silver-gray metal, odorless. Various shapes and sizes.	
BOILING POINT Greater than 2700°F	MELTING POINT 621° F
SPECIFIC GRAVITY (H ₂ O = 1) 11.34	VAPOR DENSITY Not Applicable
SOLUBILITY IN WATER Insoluble	VAPOR PRESSURE Not Applicable
EVAPORATION RATE Not Applicable	% VOLATILES BY VOLUME Not Applicable

HEALTH HAZARD INFORMATION

ROUTES OF EXPOSURE

SKIN & EYES EXPOSURE

Direct contact or exposure may result in local irritation and possible dermatitis from repeated skin contact. Symptoms are more severe from prolonged over-exposure.

INJECTION & INHALATION EXPOSURE

Dust, fume or mist may be injected and absorbed through the digestive system or inhaled and absorbed through the respiratory track. Injection or inhalation may cause irritation of the digestive system and respiratory track resulting in acute or chronic over-exposure.

ACUTE OR SHORT-TERM OVER-EXPOSURE

LEAD: Exposure to lead and its compounds may cause headache, nausea, vomiting, abdominal spasms, fatigue, sleep disturbance, weight loss, anemia and pain in legs, arms and joints.

CHRONIC OR LONG TERM OVER-EXPOSURE

LEAD: Chronic or long term exposure to lead and its compounds may produce symptoms of short term exposure, central nervous system damage, fatigue, headaches, tremors, hypertension, hallucinations, convulsions, delirium, gastrointestinal disturbances, anemia and wrist-drop. Kidney dysfunction and damage is possible. Impairment of male and female reproductive organs has been implicated but unsubstantiated. Pregnant women should be protected from excessive exposure to prevent possible neurological disorders in new-borns.

FIRST AID

INHALATION: Remove from exposure. Get medical attention if experiencing effects of overexposure.

INGESTION: Get immediate medical attention.

EYES: Flush with large quantities of water. Get immediate medical attention.

SKIN: Wash thoroughly with soap and water.

FIRE AND EXPLOSION DATA

FLASH POINT Not Applicable	AUTO IGNITION TEMPERATURE Not Applicable	FLAMMABLE LIMITS IN AIR Not Applicable
FIRE EXTINGUISHING MEDIA Dry chemical or carbon dioxide should be used on surrounding fire. Do Not use water on fires where molten metal is present.		
SPECIAL FIRE FIGHTING PRECAUTIONS Use approved full-facepiece, self-contained breathing apparatus and full protective clothing if involved in a fire.		
UNUSUAL FIRE AND EXPLOSION HAZARD Molten metals produce fume, dust, or mist that may be toxic.		

REACTIVITY DATA

STABILITY Stable	CONDITIONS TO AVOID Not Applicable	HAZARDOUS POLYMERIZATION Not Applicable
INCOMPATIBILITY Contact with hydrogen peroxide may cause a violent reaction		
HAZARDOUS DECOMPOSITION PRODUCTS Temperatures above the melting point may produce lead oxide dust and/or fumes.		

PERSONAL PROTECTION PRECAUTIONS

VENTILATION Local exhaust ventilation shall be provided in areas where exposures are above the permissible limits or threshold limit values specified by OSHA or other local, state, and federal regulations.
RESPIRATORY PROTECTION Use of approved (OSHA 29CFR1910.1025 (f)) respirators is required for applications where adequate ventilation cannot be provided.
EYES AND FACE Face shields or vented goggles should be used around molten metal. Safety glasses should be used for operations generating flying pieces.
GLOVES Gloves should be worn when handling the product.
OTHER CLOTHING AND EQUIPMENT Full protective clothing is required if the permissible exposure limit is exceeded. Hard hat, safety shoes, and other safety equipment should be worn as appropriate for the environment.

SPECIAL PRECAUTIONS/PROCEDURES

SPILL OR LEAK

Dust or particulate should be vacuumed, or wet swept where vacuuming is infeasible. Place material in dry, closed containers for disposal or recycling. Do not use compressed air or dry sweeping for cleaning. Use approved respiratory protection if dust/fume exposure possibility exists.

WASTE DISPOSAL METHOD

Material should be recycled if at all possible. Collection, transportation, and storage should be in accordance with federal, state, and local laws.

STORAGE

Store in a dry area where accidental contact with hydrogen peroxide is not possible.

OTHER SPECIAL PRECAUTIONS/PROCEDURES

Wash hands, face, neck, and arms thoroughly before eating or smoking. Eating and smoking should be confined to non-contaminated areas. Work clothes and equipment should remain in designated contaminated areas, and should never be taken home or laundered with personal clothing. Do not use compressed air for blowing dust off of clothes.

Before using the product consult the OSHA Federal Standard for Occupational Exposure to Lead 29CFR1910.1025.

ADDITIONAL INFORMATION

Lead and its inorganic compounds are neurotoxins which may produce peripheral neuropathy. For an overview of the effects of lead exposure, see OSHA 29CFR1910.1025, Appendix A.

<u>Biological Limit</u>	Lead	50	mg/100 grams whole blood
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<u>OSHA Action Levels</u>	Lead	0.03	mg/m ³ (29CFR1910.1025)
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*This product contains Toxic Chemicals subject to the reporting requirements of Section 313 of Title III of the SARA, 1986 and 40CFR372.

MATERIAL SAFETY DATA SHEET**HARD LEAD
GENERAL INFORMATION**

TRADE NAME (COMMON NAME OR SYNONYM)	DATE ISSUED	DATE REVISED
Hard Lead, Antimonial or Arsenical Alloy	2-4-85	12/1/99
MANUFACTURER'S CONTACT EXIDE CORPORATION P.O. Box 74040 Baton Rouge, Louisiana 70874 Telephone: 225 -775-3040 2400 BROOKLAWN DR. BATON ROUGE, LA		

INGREDIENTS

MATERIAL OR COMPONENT	C.A.S. #	WEIGHT %	PERMISSIBLE AIR LIMITS
Lead	7439-92-1	75-99	0.15 mg/meter ³ *
Antimony	7440-36-0	0-25	0.05 mg/meter ³ ** 0.5 mg/meter ³ *
Arsenic	7440-38-2	0-5	0.5 mg/meter ³ ** 0.02 mg/meter ³ *
Tin	7440-31-5	0-5	0.01 mg/meter ³ ** 2.0 mg/meter ³ *
*ACGIH			2.0 mg/meter ³ **
**OSHA			

PHYSICAL DATA

APPEARANCE AND ODOR Silver-gray metal, odorless. Various shapes and sizes.	
BOILING POINT Not Applicable	MELTING POINT 486 - 680 F
SPECIFIC GRAVITY (H₂O = 1) 9.6 - 11.3	VAPOR DENSITY Not Applicable
SOLUBILITY IN WATER Insoluble	VAPOR PRESSURE Not Applicable
EVAPORATION RATE Not Applicable	% VOLATILES BY VOLUME Not Applicable

HEALTH HAZARD INFORMATION

ROUTES OF EXPOSURE

SKIN & EYES EXPOSURE

Direct contact or exposure may result in local irritation and possible dermatitis from repeated skin contact. Small septic blisters and chemical burns may result from the arsenic and antimony content of the alloy. Symptoms are more severe from prolonged over-exposure.

INJECTION & INHALATION EXPOSURE

Dust, fume or mist may be injected and absorbed through the digestive system or inhaled and absorbed through the respiratory track. Injection or inhalation may cause irritation of the digestive system and respiratory track resulting in acute or chronic over-exposure.

ACUTE OR SHORT-TERM OVER-EXPOSURE

LEAD: Exposure to lead and its compounds may cause headache, nausea, vomiting, abdominal spasms, fatigue, sleep disturbance, weight loss, anemia and pain in legs, arms and joints.

ANTIMONY: Injection of antimony and its compounds may cause dizziness, nausea, vomiting, severe diarrhea, muscular pain, liver and kidney damage. Inhalation of antimony dust may cause pulmonary edema. Stibine may be generated when antimony alloys contact acid solutions and should be considered as immediate life threatening. Stibine gas may cause rapid destruction of red blood cells, blood in urine, cessation of urine production and kidney failure. Signs of exposure are headache, nausea, back pain, and upper abdominal pains.

ARSENIC: Injection of antimony and its compounds can cause gastrointestinal upset, abdominal pain, vomiting, muscle spasms, delirium, vertigo and coma. Death may follow. Inhalation of arsenic dust may cause shortness of breath, stomach pains, muscle spasms, vertigo, delirium and coma. Arsine gas may be generated when arsenic alloys contact acid solution and should be considered as immediate life threatening. Signs of exposure are severe shortness of breath, stomach pains, muscle spasms, vertigo, delirium, coma, bloody urine, possible delirium followed by coma and death. Severe kidney damage is common in acute poisoning.

CHRONIC OR LONG TERM OVER-EXPOSURE

LEAD: Chronic or long term exposure to lead and its compounds may produce symptoms of short term exposure, central nervous system damage, fatigue, headaches, tremors, hypertension, hallucinations, convulsions, delirium, gastrointestinal disturbances, anemia and wrist-drop. Kidney dysfunction and damage is possible. Impairment of male and female reproductive organs has been implicated but unsubstantiated. Pregnant women should be protected from excessive exposure to prevent possible neurological disorders in new-borns.

ANTIMONY: Injection may cause headaches, dizziness, anemia, weight loss, bleeding gums and dermatitis. Inhalation may cause inflammation of the throat, bronchitis, pneumonia, anemia, headaches, weight loss, bleeding gums, nasal inflammation and possible septum perforation.

ARSENIC: Injection and inhalation may cause anemia, weight loss, disorders of nervous, gastrointestinal and cardiovascular systems. Implicated causative agent of skin and lung cancer particularly in long-term over-exposure in occupational environment and increased among smokers.

FIRST AID

INHALATION: Remove from exposure. Get medical attention if experiencing effects of overexposure.

INGESTION: Get immediate medical attention.

EYES: Flush with large quantities of water. Get immediate medical attention.

SKIN: Wash thoroughly with soap and water.

FIRE AND EXPLOSION DATA

FLASH POINT Not Applicable	AUTO IGNITION TEMPERATURE Not Applicable	FLAMMABLE LIMITS IN AIR Not Applicable
FIRE EXTINGUISHING MEDIA Dry chemical or carbon dioxide should be used on surrounding fire. Do Not use water on fires where molten metal is present.		
SPECIAL FIRE FIGHTING PRECAUTIONS Use approved full-facepiece, self-contained breathing apparatus and full protective clothing if involved in a fire.		
UNUSUAL FIRE AND EXPLOSION HAZARD Molten metals produce fume, dust, or mist that may be toxic and/or respiratory irritants. The products, or the dust, can react vigorously with strong oxidizing agents.		

REACTIVITY DATA

STABILITY Stable	CONDITIONS TO AVOID Not Applicable	HAZARDOUS POLYMERIZATION Not Applicable
INCOMPATIBILITY Halogen gases, oxidizers or acids, or hydrogen peroxide may react violently. Under reducing conditions (strong acid or base and an active metal) or in the presence of nascent hydrogen, highly toxic stibine or arsine gas may be evolved.		
HAZARDOUS DECOMPOSITION PRODUCTS Temperatures above the melting point may produce heavy metal dust and/or fumes.		

PERSONAL PROTECTION PRECAUTIONS

VENTILATION Local exhaust ventilation shall be provided in areas where exposures are above the permissible limits or threshold limit values specified by OSHA or other local, state, and federal regulations.
RESPIRATORY PROTECTION Use of approved (OSHA 29CFR1910.1025 (f), and 29CFR1910.1018 (h)) respirators is required for applications where adequate ventilation cannot be provided..
EYES AND FACE Face shields or vented goggles should be used around molten metal. Safety glasses should be used for operations generating flying pieces.
GLOVES Gloves should be worn when handling the product
OTHER CLOTHING AND EQUIPMENT Full protective clothing is required if the permissible exposure limit is exceeded. Hard hat, safety shoes, and other safety equipment should be worn as appropriate for the environment.

SPECIAL PRECAUTIONS/PROCEDURES

SPILL OR LEAK

Dust or particulate should be vacuumed, or wet swept where vacuuming is infeasible. Place material in dry, closed containers for disposal or recycling. Do not use compressed air or dry sweeping for cleaning. Use approved respiratory protection if dust/fume exposure possibility exists.

WASTE DISPOSAL METHOD

Material should be recycled if at all possible. Collection, transportation, and storage should be in accordance with federal state, and local laws.

STORAGE

Store in a dry area where accidental contact with acids, bases, hydrogen peroxide, or halogen gases is not possible.

OTHER SPECIAL PRECAUTIONS/PROCEDURES

Wash hands, face, neck, and arms thoroughly before eating or smoking. Eating and smoking should be confined to non-contaminated areas. Work clothes and equipment should remain in designated contaminated areas, and should never be taken home or laundered with personal clothing. Do not use compressed air for blowing dust off of clothes.

Before using the product consult the OSHA Federal Standard for Occupational Exposure to Lead 29CFR1910.1025 and to Arsenic 29CFR 1910.1018.

ADDITIONAL INFORMATION

Lead and its inorganic compounds are neurotoxins which may produce peripheral neuropathy. For an overview of the effects of lead exposure, see OSHA 29CFR1910.1025, Appendix A.

Arsenic may be a pulmonary carcinogen. For an overview of the effects of arsenic exposure, see OSHA 29CFR1910.1018.

Antimony is a severe pulmonary irritant and may cause a metallic taste or damage to kidneys, liver, or nervous system. The chronic effects of antimony ingestion may resemble those of arsenic.

Tin (ic) Oxide has been shown to cause benign pneumoconiosis.

<u>Biological Limit</u>	Lead	50	mg/100 grams whole blood
<u>Osha Exposure Limit</u>	Stibine	0.10	ppm
	Arcine	0.05	ppm
<u>OSHA Action Levels</u>	Lead	0.03	mg/m ³ (29CFR1910.1025)
	Arsenic	0.005	mg/m ³ (29CFR1910.1018)

*This product contains Toxic Chemicals subject to the reporting requirements of Section 313 of Title III of the SARA, 1986 and 40CFR372.

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EXIDE CORPORATION

BATON ROUGE SMELTER MATERIAL SAFETY DATA SHEET

ANHYDROUS SODIUM SULFATE

GENERAL INFORMATION

TRADE NAME:	DATE ISSUED:	DATE REVISED:
ANHYDROUS SODIUM SULFATE	01-15-97	10/20/97
MANUFACTURER'S CONTACT:		
EXIDE CORPORATION Baton Rouge Smelter P. O. Box 74040 Baton Rouge, Louisiana 70874		
24 Hour Emergency Phone: 1-504-775-3040		

PRODUCT IDENTIFICATION

HMIS HAZARD RATINGS

HEALTH HAZARD 1 FIRE HAZARD 0 REACTIVITY 0

SARA/TITLE III HAZARD CATEGORIES

Immediate (ACUTE) Health: NO Reactive Hazard: NO
Delayed (Chronic) Health: NO Sudden Release of Pressure: NO
Fire Hazard: NO

CHEMICAL NAME: Anhydrous Sodium Sulfate CAS NUMBER: 7757-82-6
SYNONYMS/COMMON NAMES: Salt Cake
CHEMICAL FORMULA: Na₂SO₄

PHYSICAL DATA

BOILING POINT @ 760 mm Hg: NA
Melting Point: NA
VAPOR PRESSURE: NA
BULK DENSITY: Loose 92-102 lb/cu. ft.
 Tapped 95-105 lb/cu. ft.

SPECIFIC GRAVITY (H₂O = 1): 2.7 @ 20 C
SOLUBILITY IN H₂O % BY WT: ~15%
VAPOR DENSITY (Air = 1) NA:

APPEARANCE AND ODOR: Crystal, white; no odor
pH: 7

HEALTH HAZARD INFORMATION

EMERGENCY AND FIRST AID PROCEDURES

EYES:

IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. GET MEDICAL ATTENTION.

SKIN:

Wash with plenty of soap and water. Wash clothing before reuse. SEEK MEDICAL ATTENTION IF IRRITATION OCCURS.

INHALATION:

If symptoms develop, get person out of contaminated area to fresh air.

INGESTION:

NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

Have patient drink several glasses of water, then induce vomiting by having patient tickle back of throat with finger. Keep airway clear. SEEK MEDICAL ATTENTION IMMEDIATELY.

ROUTES OF EXPOSURE

INHALATION:

May cause irritation of respiratory passages.

SKIN:

May cause minor irritation.

EYE CONTACT:

May cause irritation.

INGESTION:

May cause diarrhea.

EFFECTS OF OVEREXPOSURE

ACUTE:

May cause irritation of the eyes, skin or respiratory passages.

Ingestion may result in diarrhea.

CHRONIC:

No known chronic effects.

TOXICOLOGY DATA:

Acute Oral LD50 (mouse) 5989 mg/kg

FIRE AND EXPLOSION DATA

FLASH POINT: NA AUTOIGNITION TEMPERATURE: Not combustible
FLAMMABLE LIMITS IN AIR, % BY VOLUME - UPPER: NA
LOWER: NA

EXTINGUISHING MEDIA:

This product is not combustible. Use agents suitable for materials in surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES:

None.

UNUSUAL FIRE AND EXPLOSION HAZARD:

None.

REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY:

None.

INCOMPATIBILITY:

None.

HAZARDOUS DECOMPOSITION PRODUCTS:

None.

CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION:

Material not known to polymerize.

SPECIAL PROTECTION

VENTILATION REQUIREMENTS:

Engineering controls and local exhaust ventilation are required to ensure that worker exposure to this product is below the current TLV for nuisance dust
(TLV = 10 mg/m³ TWA).

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY:

A NIOSH/MSHA approved respirator, following manufacturer's recommendation should be used where dust, fumes, mist, or spray may be generated.

EYE:

Wear safety glasses with side shields or chemical safety goggles.
(ANSI Z87.1)

GLOVES:

Industrial grade rubber or plastic gloves should be worn.

OTHER CLOTHING AND EQUIPMENT:

Standard work clothing. Emergency shower and eyewash facility should be in close proximity. (ANSI Z358.1)

HANDLING AND STORAGE

HANDLING AND STORAGE PRECAUTIONS:

Store in tightly closed containers away from sources of heat.

PRODUCT DISPOSAL:

Product should be completely removed from this container. Material that cannot be used or chemically reprocessed should be disposed of in a manner meeting government regulations.

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ENVIRONMENTAL PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

If a material is spilled, steps should be taken to prevent discharges to streams or sewer systems. Spills or releases should be reported, if required, to the appropriate local, state, and federal regulatory agencies.

WASTE DISPOSAL METHOD:

Clean-up action should be carefully planned and executed. Shovel or sweep up and reuse, or place in closed container for proper disposal. Flush residue with water. Shipment, storage, and/or disposal of waste materials are regulated and action to handle spilled or released materials must meet the applicable rules. If any question exists, the appropriate agencies should be contacted to assure proper action being taken.

WARNING LABEL INFORMATION

SIGNAL WORD: CAUTION

STATEMENT OF HAZARDS:

MAY CAUSE IRRITATION TO EYES, SKIN OR RESPIRATORY PASSAGES

PRECAUTIONARY STATEMENTS:

Do not breathe dust.

Do not get in eyes, on skin, on clothing.

Wear respirator, chemical goggles, and gloves when dust may be generated.

FIRST AID:

FOR EYES:

IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. **GET MEDICAL ATTENTION.**

FOR SKIN:

Wash with plenty of soap and water. Wash clothing before reuse. **SEEK MEDICAL ATTENTION IF IRRITATION OCCURS.**

IF INHALED:

If symptoms develop, get person out of contaminated area to fresh air.

IF SWALLOWED:

NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

Have patient drink several glasses of water, then induce vomiting by having patient tickle back of throat with finger. Keep airway clear. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

IN CASE OF:

SPILL OR LEAK:

Follow precautionary statements. Shovel or sweep up and reuse, or place in closed container for proper disposal. Flush residue with water.

HANDLING AND STORAGE PRECAUTIONS

Store in tightly closed containers away from sources of heat.

HMIS RATING SYSTEM: HEALTH 1 FLAMMABILITY 0 REACTIVITY 0
FOR INDUSTRIAL USE ONLY

APPENDIX D

EMERGENCY EQUIPMENT LIST

EMERGENCY EQUIPMENT LIST
EXIDE TECHNOLOGIES, BATON ROUGE SMELTER

Item	Quantity	Location	Description	Capabilities
Personal Protective Equipment				
3M Self Contained Breathing Apparatus (SCBA)	1	Safety Office	30-minute self-contained breathing apparatus (SCBA) with 5-minute air pack be used for supplied air.	Provides breathable air for a thirty minute period. For use in the event that an oxygen deficient atmosphere is present, or in the event of a chlorine leak from the chlorination system.
Scott Air Line Respirators	2	Safety Office and Changehouse	Supplied air respirators for use in oxygen deficient atmosphere.	Provides breathable air via an air line. For use in oxygen deficient areas such as baghouse cells.
SE 400 powered air respirators	5	Safety Office	SEA positive pressure fan supplied SE400 respirators with high efficiency powered air purifying filters	For use in areas less than 100 times the PEL for lead.
3M Full Face Respirators*	20	Changehouse	Full face respirators with particulate, acid gas and organic vapor cartridges.	For use in areas less than 50 times the PEL for lead.
3M Half Face Respirators*	30	Changehouse	Half face respirators with particulate, acid gas and organic vapor cartridges.	For use in areas less than 10 times the PEL for lead.
Tyvek Coveralls	30	Changehouse	Tyvek white coveralls, size large and extra large.	Used to prevent contact exposure to lead or other chemicals.
Tyvek coveralls	25	Safety Locker in Maintenance Shop	Tyvek white coveralls, size large and extra large.	Used to prevent contact exposure to lead or other chemicals.
Tyvek coveralls	25	Battery Breaker Unit Safety Locker	Tyvek white coveralls, size large and extra large.	Used to prevent contact exposure to lead or other chemicals.
Ear Plugs	100 per box	Boxes located at Shift Foreman's Office, Battery Breaker Unit, Changehouse and Maintenance Shop		Foam earplugs for hearing protection, reduce noise levels typically by 30 decibels.
Ear Muffs	14	Changehouse	Plastic ear muffs cover the entire ear.	Used for prolonged noise exposure, reduce noise levels typically by 25 decibels.
Disposable Gloves	100 per box	Changehouse, Maintenance Shop	5 mil disposable nitril gloves.	Used to prevent contact exposure to lead or other chemicals.
Leather Gloves	30 pair	Changehouse	Heat resistant leather work gloves.	Used to prevent burns when performing hot work or working with molten metal.
Chemical Resistant Gloves	100 pair	Changehouse	Chemical and acid resistant Neoprene gloves.	Used to prevent chemical exposure, acid or caustic burns.
Chemical Resistant Gloves	20 pair	Battery Breaker Unit Safety Locker	Chemical and acid resistant Neoprene gloves.	Used to prevent chemical exposure, acid or caustic burns.
Chemical Resistant Steel-toed Boots	18 pair	Changehouse	Chemical resistant boot with steel toes.	Used to prevent chemical exposure and crushing injuries to feet, kept in sizes 8 through 13.
Hard Hats	30	Changehouse	High density polyethylene hart hat.	Used to prevent head injury.
Face-Shield	40	Changehouse	Clear plastic full face guard.	Used to prevent facial injuries, flis onto hard hats, can be raised or lowered.

EMERGENCY EQUIPMENT LIST
EXIDE TECHNOLOGIES, BATON ROUGE SMELTER

Item	Quantity	Location	Description	Capabilities
Safety Equipment				
Harness and Lanyards	10	Safety Office	Fall protection, full body hardness and lanyards.	Used when working at heights, to prevent falls.
Locks and tags	6	Water Treatment Control Room	Lock and Tags	Used to isolate hazardous energy when working on equipment in the area.
Locks and tags	22	Battery Breaker Unit Control Room	Lock and Tags	Used to isolate hazardous energy when working on equipment in the area.
Locks and tags	8	Production Area Control Room	Lock and Tags	Used to isolate hazardous energy when working on equipment in the area.
Locks and tags	6	No. 4 Baghouse Control Room	Lock and Tags	Used to isolate hazardous energy when working on equipment in the area.
MSA Hazardous	1	Laboratory	MA Passport, Hazardous Gas Monitor	Used to detect oxygen level, explosive gas level carbon monoxide level in confined spaces.
Fire Extinguishers	varies	See map	ABC and Class D	Each control room is equipped with a CO2 fire extinguisher for electrical fires, Class D extinguishers are located at the Chemical Warehouse, the Phosphors Shed and the Production area to be used in the event of a metals fire.
Spill Absorbent Material	3	Shop, Water Treatment, Production Area	Absorbent material.	To be used to absorb spilled oil, grease or hydraulic fluids.
Neutralization Materials	2	Shop, Battery Breaker Unit	Acid neutralization materials.	To be used to neutralize any possible acid spills.
Spill Kit	2	Chemical Warehouse and Parts Warehouse	Spill Kit	Contains absorbent materials and neutralization chemicals.
Air Blowers	2	Maintenance Shop	Powered air blowers	Used to supply air to poorly ventilated areas or to confined spaces.
Mobile Equipment				
Forklifts	14	Plant	Forklifts	Heavy lifting
Mobile Crane	1	Maintenance Shop	Cherry Picker	Heavy lifting
Manlift	2	Maintenance Shop	40-foot and 60-foot manlift	Reaching heights
Medical Equipment and Supplies				
Stretcher	1	Lunchroom	Stretcher	Used to transport injured personnel.
First Aid Room	1	Safety Office	Contains medical supplies, blood pressure monitor and stethoscopes	For onsite treatment of injuries.

**RESPONSE
ATTACHMENT A8**

APPENDIX 8

CLOSURE AND POST-CLOSURE PLAN

REVISED FACILITY CLOSURE PLAN
EXIDE TECHNOLOGIES, BATON ROUGE SMELTER
LAD008184137

October 2005

TABLE OF CONTENTS

	Page
1.0 INTRODUCTION	1
2.0 BACKGROUND	1
3.0 CLOSURE PROCEDURES	1
3.1 General	1
3.2 Slag Stabilization Area	2
3.3 Containment Building	2
3.4 Truck Trailer Storage Area	4
3.5 Whole Battery Storage Area	5
4.0 CLOSURE COST ESTIMATE	5
5.0 POST-CLOSURE CARE	6

LIST OF TABLES

Table 1 - Summary of Closure Costs
Table 1A - Supplemental Closure Cost Information, Slag Stabilization Area
Table 1B - Supplemental Closure Cost Information, Containment Building
Table 1C - Supplemental Closure Cost Information, Truck Trailer Storage Area
Table 1D - Supplemental Closure Cost Information, Whole Battery Storage Area
Table 2 - Post-Closure Care Cost Estimate

LIST OF FIGURES

Figure 1 - Site Map
Figure 2 - Containment Building

1.0 INTRODUCTION

Exide Technologies (Exide) Baton Rouge smelter has developed this Revised Closure Plan in accordance with Chapter 35 of the Louisiana Department of Environmental Quality – Hazardous Waste Division (LDEQ-HWD) Environmental Regulatory Code. This closure plan includes a section describing the facility background and operations, the closure methodologies for each permitted hazardous waste unit, and a closure and post-closure cost estimate. The cost estimates were prepared in accordance with Chapter 37 of the LDEQ-HDW Environmental Regulatory Code.

This revised Closure Plan is being submitted to update the closure cost estimates and closure procedures for the Containment Building, Area 2, to address the upgrades to the floor of this area. The revised closure cost estimates are listed on Table 1, and described in Section 4.0 and have been reviewed and corrected for mathematical errors and consistent unit costs.

2.0 BACKGROUND

The Exide Baton Rouge smelter is located at 2400 Brooklawn Drive, in East Baton Rouge Parish, Louisiana. This facility is a secondary lead smelter and refinery which recycles inorganic lead-bearing materials into lead pig and block ingots, which are sold to customers for use in making batteries, weights, bearings, ammunition, and chemicals. The facility has been in operation since the early 1969.

Most of the raw materials used by the Baton Rouge smelter to produce lead are purchased off-site. The lead-bearing raw materials are delivered to the facility in trucks or trailers and are unloaded at the loading dock. Lead acid batteries are either fed directly into the battery breaker or are stored temporarily in permitted storage areas (the truck/trailer storage area and the whole battery storage area). Other lead-bearing materials are received in drums. These drums will be emptied into a feed-stock pile in the Containment Building. Lead acid batteries are processed by cutting the batteries, separating them into individual components. The lead-rich paste is stored in the containment building prior to smelting. The facility operates one blast furnace and one reverberatory furnace that are used to smelt the lead-bearing raw materials. The molten lead is cast into ingots using two casting machines. The lead ingots are loaded into trucks and transported off-site for reuse. As a part of the lead recycled process, the Baton Rouge smelter produces a blast furnace slag. This slag contains mostly iron, silica and calcium oxides. The slag is treated by mixing with Portland cement and sodium silicate and is placed into a permitted solid waste landfill.

On September 30, 1993 the facility was issued a Final Operating Permit (No.LAD008184137-OP-1) by the LDEQ-HWD. The Baton Rouge smelter has two permitted hazardous waste storage areas, three existing storage areas, (the truck/trailer storage area, the K069/D008 storage area and the whole battery storage area). The facility has one existing permitted treatment area, the slag stabilization area. Exide also has a containment building that is used to store raw materials prior to recycling. All of these units are shown on the site map presented on Figure 1.

The upgrades to the Containment Building, Area 2 included installation of 80-mil HDPE liner, a 6-inch concrete pad and acid brick installed over the existing floor.

3.0 CLOSURE PROCEDURES

3.1 General

The hazardous waste units at the facility will be clean closed. No hazardous waste or waste residual will be left at a closed unit. The closure procedures described herein are based on Exide hiring a third party contractor or consultant to perform the closure activities. Personnel, equipment or resources from the Baton Rouge smelter will not be used in any manner as a part of the closure procedures. For each hazardous waste unit, the closure procedures will describe:

- closure methodologies for the specific units,
- maximum inventory of hazardous materials at each unit,
- a description of how the hazardous material will be removed from the unit,
- a description of the decontamination procedures to be used for each unit,
- the confirmation sampling procedures to be followed at each unit to confirm clean closure.

For each area, the following decontamination methods will be used:

- 1) Equipment destined for resale/reuse shall be cleaned until visually clean.
- 2) Debris such as structural steel destined for recycling shall be cleaned until visually noticeable contamination has been removed.
- 3) Debris such as wood, masonry rubble, etc., destined for land disposal at a permitted facility must meet the acceptance criteria of the facility. Therefore, if material is going to a hazardous waste disposal facility, it may still be characteristically hazardous. Material destined for a non-hazardous disposal facility must be characterized non-hazardous. The type and amount of characterization sampling shall be determined by the receiving facility.
- 4) The adequacy of cleaning for building components and other materials that remain on-site will be determined using the wash water evaluation method.

3.2 The Slag Stabilization Unit

The slag stabilization unit is a hazardous waste treatment unit. As a part of recycling spent lead batteries, a blast furnace slag is generated. After the slag is allowed to cool, it is treated at the slag stabilization unit. The slag is crushed to small diameter, and then treated by mixing with Portland cement and sodium silicate and is placed into a permitted solid waste landfill (GD-033-2054/P0326). Stabilized slag is sampled and analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) at least quarterly. It is planned that the slag stabilization unit will continue to operate for the lifetime of the Baton Rouge smelter. Partial closure of this unit is not anticipated.

Closure of this unit will involve removal of all slag, disposal of the slag in a permitted hazardous waste landfill, decontamination of the area and confirmation that clean closure has been achieved.

contractor using rented or contractor supplied front-end loaders will complete the loading. The trailers will transport the slag off-site to a permitted hazardous waste disposal site.

Once the residual slag has been removed, the entire slag stabilization area along with the slag crusher feed vessel will be decontaminated using steam cleaners or pressure washers. The front-end loader used to load the slag will also be decontaminated. The wash water will be collected in third-party supplied trailers and transported for off-site disposal. Grab samples of the wash water will be collected from the last flush of decontamination water by filling a laboratory supplied container at a sump or low point. The sample will be analyzed to determine if the decontamination process is complete. It is estimated that 23,500 gallons of wash water will be generated, contained, transported and disposed. Personal protective equipment for the decontamination crew will include, respirators with particle cartridges, tyvek suits, gloves and hardhats with splashguards.

Once decontamination is complete, five (5) confirmation soil samples will be collected and analyzed. The actual location of the samples will be selected by the Professional Engineer responsible for the Closure Certification. The samples will be collected by drilling through the concrete and collecting soil samples for lead analysis. Soil samples will be collected from 0-12 inches below the floor system. A certification report will be prepared and certified by an independent registered professional engineer, stating the facility was closed in accordance the approved closure plan.

3.3 The Containment Building

The containment building stores lead-bearing raw materials that will be recycled in the blast or reverberatory furnaces. The building is divided into areas where particular feedstock or slag is stored. The building is completely enclosed and ventilated. It is planned that the containment building will continue to operate for the lifetime of the Baton Rouge smelter. Partial closure of the containment building is not anticipated.

The maximum inventory of slag in the containment building was calculated to be 3,333 tons, as detailed in Table 1B. The residual slag will be loaded into lined end dump trailers. An off-site contractor using rented or contractor supplied front-end loaders will complete the loading. The trailers will transport the slag off-site to a permitted hazardous waste disposal site.

The maximum inventory of battery components and other lead-bearing materials has been calculated to be 12,080 tons, as shown on Table 1B. This material will be loaded into vehicles and transported to another lead smelter for recycling.

Once all of the residual slag and the lead-bearing raw materials have been removed, a sweeper truck will be used to clean any residual material. After sweeping, the walls and floor of the containment building will be decontaminated using steam cleaners or pressure washers. The front-end loaders used to load the inventory and the sweeper truck will also be decontaminated. The wash water will be collected in third-party supplied trailers and transported for off-site disposal. Grab samples of the wash water will be collected from the last flush of decontamination water by filling a laboratory-supplied container at a sump or low point. The sample will be analyzed to determine if the decontamination process is complete. It is estimated that 324,500 gallons of wash water will be generated, contained, transported and disposed.

Personal protective equipment for the decontamination crew will include, respirators with particle cartridges, tyvek suits, gloves and hardhats with splashguards.

Once decontamination is complete, ninety (90) confirmation samples will be collected and analyzed. The actual location of the samples will be selected by the professional engineer responsible for closure certification. The samples will be collected by drilling through the concrete and collecting soil samples for analysis. Soil samples will be collected from 0-12 inches below the floor system. In the Paste Storage area of the containment building, a hoe ram will be brought in to break-through the acid brick floor and one of the samples should be collected from the surface of the original floor. A certification report will be prepared and certified by an independent registered professional engineer. The report will certify that the containment building was closed in accordance the approved closure plan.

3.4 Truck/Trailer Storage Area

Batteries that are received by Exide are either unloaded at the loading dock or are stored in the truck/trailer storage area. Batteries at the truck/trailer storage area are stored on pallets prior to being processed in the battery breaking area. It is planned that the Truck/Trailer storage area will continue to operate for the lifetime of the Baton Rouge smelter. Partial closure of this area is not anticipated.

The maximum inventory of batteries stored in this area is 85,000 batteries, or 85,000 gallons. The inventory is already loaded on trailer, however, time has been allotted for restacking and ordering the loaded batteries. The batteries will be transported to another lead smelter for recycling.

The area will be decontaminated using steam cleaners or pressure washers. The wash water will be collected in third-party supplied trailers and transported for off-site disposal. Grab samples of the wash water will be collected from the last flush of decontamination water by filling a laboratory supplied container at a sump or low point. The sample will be analyzed to determine if the decontamination process is complete. It is estimated that 17,280 gallons of wash water will be generated, contained, transported and disposed. Personal protective equipment for the decontamination crew will include, respirators with particle cartridges, tyvek suits, gloves and hardhats with splashguards.

Once decontamination is complete, fifteen (15) confirmation samples will be collected and analyzed. The actual location of the samples will be selected by the Professional Engineer responsible for the closure certification. The samples will be collected by drilling through the concrete and collecting soil samples for analysis. Samples will be collected from 0-12 inches below the floor system. A certification report will be prepared and certified by an independent registered professional engineer. The closure report will state the truck/trailer storage area was closed in accordance the approved closure plan.

3.5 The Whole Battery Storage Area

The whole battery storage area is used to store batteries prior to processing them. The batteries are stored on pallets. No closure date for this unit has been designated, and partial closure is not expected.

The maximum inventory of spent batteries is 81,000 batteries or 81,000 gallons. The inventory will be loaded into vehicles using a fork lift and transported to another lead smelter for recycling.

The area will be decontaminated using steam cleaners or pressure washers. The wash water will be collected in third-party supplied trailers and transported for off-site disposal. Grab samples of the wash water will be collected from the last flush of decontamination water by filling a laboratory supplied container at a sump or low point. The sample will be analyzed to determine if the decontamination process is complete. It is estimated that 9,500 gallons of wash water will be generated, contained, transported and disposed. Personal protective equipment for the decontamination crew will include, respirators with particle cartridges, tyvek suits, gloves and hardhats with splashguards.

Once decontamination is complete, eight (8) confirmation samples will be collected and analyzed. The actual location of the samples will be selected by the Professional Engineer responsible for the closure certification. The samples will be collected by drilling through the concrete and collecting soil samples for analysis. Samples will be collected from 0-12 inches below the floor system. A certification report will be prepared and certified by an independent registered professional engineer, stating the whole battery storage area was closed in accordance the approved closure plan.

3.6 Performance Standards

Decontamination water samples from the Slag Stabilization Unit, Containment Building, Truck/Trailer Storage Area, and Whole Battery Storage Area will be analyzed for compliance with the following performance standards:

- Lead 0.050 mg/L
- Arsenic 0.050 mg/L
- Chromium 0.050 mg/L
- Cadmium 0.010 mg/L
- Mercury 0.002 mg/L

The decontamination water performance standards are the LAC 33:IX Subpart 1 Human Health Protection Drinking Water Supply standards which apply to surface water bodies designated as drinking water supply and also protect for primary and secondary contact recreation and fish consumption.

Soil samples from the Slag Stabilization Unit, Containment Building, Truck/Trailer Storage Area, and Whole Battery Storage Area will be analyzed for compliance with the following performance standards:

- Total Lead 1,400 mg/kg
- Total Arsenic 12 mg/kg
- Total Chromium 310,000 mg/kg
- Total Barium 14,000 mg/kg
- Total Cadmium 100 mg/kg
- Total Silver 1,000 mg/kg
- Total Selenium 1,000 mg/kg

- Total Mercury 61 mg/kg
- Total Antimony 82 mg/kg
- pH 2 units minimum

Soil performance standards are the LDEQ RECAP Screening Option standards for industrial soils.

4.0 CLOSURE COST ESTIMATES

It is estimated that the cost of closing the permitted and interim status hazardous waste units at the facility, as described in this closure plan, is approximately \$1,399,491.90 including 10% contingency. A detailed cost estimate is provided in Table 1. The detailed cost estimate was calculated in accordance with the requirements of LAC 33:V.3705. The cost estimate is based on the following assumptions:

- The cost is estimated in current dollars, as of December 2000 and were adjusted for inflation to 2003.
- Closure costs are based on hiring third party contractors and consultants to close the units.
- Closure costs do not include any salvage value from the sale of hazardous waste, structures, land or other assets.

A breakdown of the closure costs for each unit is included. Table 1A presents the detailed cost estimate for the slag stabilization area. Table 1B presents the detailed cost estimate for the containment building. Table 1C lists the detailed cost estimate for the truck/trailer area and Table 1D has the whole battery storage area cost breakdown. Each of these tables lists the following information:

- the calculations to determine the maximum inventory,
- The unit cost of loading, transporting and disposing of the maximum inventory,
- the dimensions of the unit to be decontaminated,
- the number of people needed to complete decontamination of the unit,
- the calculation for the amount of wash water generated during decontamination,
- the number of water and soil confirmation samples to be collected at the closed unit,
- the type and amount of equipment that needs to be rented for closure activities,
- and the cost of preparing a closure certification report for each unit.

The unit costs for loading of batteries differ between Tables 1C and 1D as the batteries at the Truck/Trailer Area are already in trailers and only require inspection prior to shipment while the batteries at the Whole Battery Storage Area require loading of the pallets onto trucks. The unit costs for decontamination product rates and water usage vary depending on the estimated level of effort required. The closure cost estimate has been used by Exide to update Financial Assurance for the Baton Rouge smelter.

5.0 POST-CLOSURE CARE

The Baton Rouge smelter has two units in post-closure care, Closed Waste Pile No.1 and Closed Waste Pile No. 2. Figure 1 shows the locations of these units. The units are slag disposal areas that were closed in-place in 1985 and 1986. The Post-Closure Permit was issued in May 2001. The post-closure period of 30 years begins at issuance of the permit. Two years have already been conducted. Twenty-eight years remain in the post-closure period.

Post-closure care of these units involves maintenance of the cap and groundwater monitoring. Cap maintenance includes top-soil maintenance, fertilizing, reseeding, and grass cutting and upkeep. Cap integrity inspections will be performed and an annual certification by an engineer will be completed, documenting the integrity of the caps. Groundwater monitoring activities include purging and sampling 7 monitor wells twice per year, collection and analysis of groundwater samples and preparation of an annual report. One well MW-1R is located up gradient of the closed units, and six wells, MW-4R, MW-12R, MW-13R, MW-16, MW-17 and MW-18 are located down gradient of the closed units. The groundwater samples from each well will be analyzed for chloride, sulfate, lead, cadmium, manganese, sodium, iron, pH and specific conductance. The annual report will contain the analytical data, potentiometric maps and a summary of the groundwater quality for the closed units.

Table 2 presents the post-closure care cost estimates. The estimated post-closure care cost is \$219,028.11 including 10% contingency. These estimates were prepared in accordance with LAC 33:V.3709, using current dollar values as of December 2000 and adjusted for inflation to 2003. The estimates are based on hiring third-party contractors or consultants to perform the post-closure activities.

TABLE 1
SUMMARY OF CLOSURE COSTS

Description	Units	Unit Cost	Total Cost
A. Slag Stabilization Area			
1 Loading of Residual Slag (144.4 tons)	144.4	\$2.00	\$288.80
2 Transportation of Residual Slag (144.4 tons)	144.4	\$27.50	\$3,971.00
3 Disposal of Residual Slag (144.4 tons)	144.4	\$150.00	\$21,660.00
4 Facility Decontamination (10 hours)	10	\$127.00	\$1,270.00
Slag Vessel Decontamination	1	\$500.00	\$500.00
5 Water Characterization	5	\$50.00	\$250.00
6 Transportation of Wash Water (5 loads)	5	\$326.00	\$1,630.00
7 Disposal of Wash Water (23,500 gallons)	23,500	\$0.15	\$3,525.00
8 Personal Protective Equipment	6	\$45.00	\$270.00
9 Confirmation Sampling	5	\$500.00	\$2,500.00
10 Laboratory Analysis (including QA/QC samples)			
a. Wash Water	6	\$18.00	\$108.00
b. Concrete Core Samples	6	\$20.00	\$120.00
11 Equipment Lease			
a. Front End Loader	1	\$125.00	\$125.00
b. Steam Cleaners	5	\$45.00	\$225.00
12 Certification	1	\$5,000.00	\$5,000.00
Subtotal - A			\$41,442.80

TABLE 1
SUMMARY OF CLOSURE COSTS

Description	Units	Unit Cost	Total Cost
B. Containment Building			
1 Inventory Disposal - Residual Slag			
a. Loading Inventory (3,333 tons)	3,333	\$2.00	\$6,666.00
b. Transportation of Inventory (3,333 tons)	3,333	\$27.50	\$91,657.50
c. Disposal of Inventory (3,333 tons)	3,333	\$150.00	\$499,950.00
Inventory Removal - Lead Material for Reuse			
d. Loading Inventory (12,080 tons)	12,080	\$2.00	\$24,160.00
e. Transportation of Inventory (12,080 tons)	12,080	\$18.00	\$217,440.00
2 Facility Decontamination			
a. Sweeping (10 hours)	10	\$18.00	\$180.00
b. Decontamination (46 hours)	46	\$397.00	\$18,262.00
3 Water Characterization	65	\$50.00	\$3,250.00
4 Transportation of Wash Water (65 loads)	65	\$326.00	\$21,190.00
5 Disposal of Wash Water (324,500 gallons)	324,500	\$0.15	\$48,675.00
6 Confirmation Sampling	90	\$650.00	\$58,500.00
7 Personal Protective Equipment	273	\$45.00	\$12,285.00
8 Laboratory Analysis (including QA/QC samples)			
a. Wash Water	68	\$18.00	\$1,224.00
b. Concrete Core Samples	94	\$20.00	\$1,880.00
9 Equipment Lease			
a. Front End Loaders	2	\$125.00	\$250.00
b. Steam Cleaners	20	\$360.00	\$7,200.00
c. Hoe Ram	1	\$400.00	\$400.00
d. Sweeper	1	\$1,300.00	\$1,300.00
10 Certification	1	\$9,000.00	\$9,000.00
Subtotal B			\$1,023,469.50

TABLE 1
SUMMARY OF CLOSURE COSTS

Description	Units	Unit Cost	Total Cost
C. Truck/Trailer Storage Area			
1 Inventory Disposal			
a. Loading Inventory (85,000 batteries)	85,000	\$0.01	\$850.00
a. Transportation of Inventory (85,000 batteries)	85,000	\$0.42	\$35,700.00
2 Facility Decontamination (6 hours)	6	\$109.00	\$654.00
3 Water Characterization	4	\$50.00	\$200.00
4 Transportation of Wash Water (4 loads)	4	\$326.00	\$1,304.00
5 Disposal of Wash Water (17,280 gallons)	17,280	\$0.15	\$2,592.00
6 Confirmation Sampling	15	\$500.00	\$7,500.00
7 Personal Protective Equipment	5	\$45.00	\$225.00
8 Laboratory Analysis (including QA/QC samples)			
a. Wash Water	5	\$18.00	\$90.00
b. Concrete Core Samples	16	\$20.00	\$320.00
9 Equipment Lease			
b. Steam Cleaners	4	\$45.00	\$180.00
10 Certification	1	\$3,500.00	\$3,500.00
Subtotal C			\$53,115.00

TABLE 1
SUMMARY OF CLOSURE COSTS

Description	Units	Unit Cost	Total Cost
D. Whole Battery Storage Area			
1 Inventory Disposal			
a. Loading Inventory (81,000 batteries)	81,000	\$0.05	\$4,050.00
b. Transportation of Inventory (81,000 batteries)	81,000	\$0.42	\$34,020.00
2 Facility Decontamination (4 hours)	5	\$91.00	\$455.00
3 Water Characterization	2	\$50.00	\$100.00
4 Transportation of Wash Water (2 loads)	2	\$326.00	\$652.00
5 Disposal of Wash Water (9,500 gallons)	9,500	\$0.15	\$1,425.00
6 Confirmation Sampling	8	\$500.00	\$4,000.00
7 Personal Protective Equipment	4	\$45.00	\$180.00
8 Laboratory Analysis (including QA/QC samples)			
a. Wash Water	3	\$18.00	\$54.00
b. Concrete Core Samples	9	\$20.00	\$180.00
9 Equipment Lease			
a. Fork Lift	1	\$75.00	\$75.00
b. Steam Cleaner	3	\$45.00	\$135.00
10 Certification	1	\$3,500.00	\$3,500.00
Subtotal D			\$48,826.00
CLOSURE COSTS			\$1,166,853.30
10% CONTINGENCY			\$116,685.33
TOTAL CLOSURE COSTS			\$1,283,538.63

Inflation adjustment for 2001 (2.5%)	\$1,315,627.10
Inflation adjustment for 2002 (2.5%)	\$1,348,517.77
Inflation adjustment for 2003 (2.4%)	\$1,380,882.20

TABLE 1A

SUPPLEMENTAL CLOSURE COST INFORMATION
SLAG STABILIZATION AREA

A. INVENTORY DISPOSAL

1. Maximum quantity of residual slag to be removed and disposed off-site.

$$\begin{aligned}20'w \times 15'l \times 10'h &= 3,000 \text{ ft}^3 \\3,000 \text{ ft}^3 / 27\text{ft}^3/\text{yd}^3 &= 111.1 \text{ yd}^3 \\111.1 \text{ yd}^3 \times 1.3 \text{ tons/yd}^3 &= 144.4 \text{ tons}\end{aligned}$$

2. Unit cost to dispose of residual slag.

$$\begin{aligned}\text{Loading: } \$2.00/\text{ton} \times 144.4 \text{ tons} &= \$288.80 \\ \text{Transportation: } \$27.50/\text{ton} \times 144.4 \text{ tons} &= \$3,971.00 \\ \text{Disposal: } \$150.00/\text{ton} \times 144.4 \text{ tons} &= \$21,660.00\end{aligned}$$

$$\text{Total cost for inventory disposal} = \$25,919.80$$

B. DECONTAMINATION OF SLAG STABILIZATION AREA

1. Total surface area to be decontaminated.

$$174'l \times 27'w = 4,700\text{ft}^2 \text{ of surface area to be decontaminated.}$$

2. Unit cost of decontamination.

$$\begin{aligned}\text{Crew} &= 1 \text{ supervisor } (\$37.00/\text{hour}) \text{ and } 5 \text{ laborers } (\$18.00/\text{hour each}) \\ 100 \text{ ft}^2/\text{hour} \times 5 \text{ laborers} &= 500 \text{ ft}^2/\text{hour} \\ 4,700\text{ft}^2 / 500 \text{ ft}^2/\text{hour} &= 9.5 \text{ hours} \\ \text{Plus } 0.5 \text{ hours for equipment decontamination} & \\ 10 \text{ hours} \times \$127.00 &= \$1,270.00\end{aligned}$$

3. Decontamination of the slag crusher feed vessel.

$$1 \text{ feed vessel} \times \$500.00 \text{ decontamination cost} = \$500.00$$

$$\text{Total cost for decontamination} = \$1,770.00$$

C. DISPOSAL OF WASH WATER

1. Volume of water generated during decontamination.

$$\begin{aligned}\text{High pressure wash} &= 4.0 \text{ gallons per ft}^2 \\ 4,700 \text{ ft}^2 \times 4.0 \text{ gallons per ft}^2 &= 18,800 \text{ gallons} \\ \text{Vessel decontamination} &= 4,200 \text{ gallons} \\ \text{Equipment decontamination} &= 500 \text{ gallons} \\ \text{Total amount of waste water} &= 23,500 \text{ gallons}\end{aligned}$$

2. Water characterization.

1 sample every 5,000 gallons

Sampling crew charge = \$50.00 / water sample

23,500 gallons / 5,000 gallons/sample = 5 water samples

5 water samples x \$50.00/sample = \$250.00

3. Transportation of wash water.

23,500 gallons / 5,000gallons/ load = 5 loads

5 loads x \$326.00/load = \$1,630.00

4. Disposal of wash water.

23,500 gallons x \$0.15/gallon = \$3,525.00

Total cost for disposal of wash water = \$5,405.00

D. PERSONAL PROTECTIVE EQUIPMENT

1. \$45.00 per man x 6 man crew = \$270.00

E. CONFIRMATION SAMPLING

1. Concrete core samples: 1sample every 1,000ft²

4,700 ft² / 1,000 ft²/sample = 5 samples

Sampling crew charge = \$500.00 / concrete core sample

5 concrete core samples x \$500/sample = \$2,500.00

2. Laboratory analysis (lead).

5 water samples x \$18.00/sample = \$90.00

5 concrete core samples x \$20.00/sample = \$100.00

QA/QC samples (1 water and 1 soil) = \$38.00

Total cost for confirmation sampling = \$2,728.00

F. EQUIPMENT LEASE

1. 1 Front end loader = \$125.00

2. 5 Steam cleaners: 5 x \$45.00 = \$225.00

Total cost for equipment lease = \$350.00

G. CLOSURE CERTIFICATION

Lump Sum = \$5,000.00

SLAG STABILIZATION AREA TOTAL CLOSURE COSTS = \$41,442.80

Inflation adjustment for 2001 - 2.5 % = \$42,478.87

Inflation adjustment for 2002 - 2.5 % = \$43,540.84

Inflation adjustment for 2003 - 2.4% = \$44,585.82

TABLE 1B

**SUPPLEMENTAL CLOSURE COST INFORMATION
CONTAINMENT BUILDING**

A. INVENTORY DISPOSAL

1. Maximum quantity of residual slag to be removed and disposed off-site.

a) Slag storage Area 1:

$$\begin{aligned} 100'l \times 25'w \times 10'h &= 25,000 \text{ ft}^3 \\ 25,000 \text{ ft}^3 / 27 \text{ ft}^3/\text{yd}^3 &= 925.93 \text{ yd}^3 \\ 925.93 \text{ yd}^3 \times 1.3 \text{ tons}/\text{yd}^3 &= 1,204 \text{ tons} \end{aligned}$$

b) Slag storage Area 2:

$$\begin{aligned} 77'l \times 45'w \times 12'h &= 41,580 \text{ ft}^3 \\ 41,580 \text{ ft}^3 / 27 \text{ ft}^3/\text{yd}^3 &= 1,540 \text{ yd}^3 \\ 1,540 \text{ yd}^3 \times 1.3 \text{ tons}/\text{yd}^3 &= 2,002 \text{ tons} \end{aligned}$$

Total residual slag to be removed and disposed = 3,206 tons; however assume 3,333 tons as that volume is reflected in the original permit.

2. Unit cost to dispose of residual slag.

$$\begin{aligned} \text{Loading: } \$2.00/\text{ton} \times 3,333 \text{ tons} &= \$6,666.00 \\ \text{Transportation: } \$27.50/\text{ton} \times 3,333 \text{ tons} &= \$91,657.50 \\ \text{Disposal: } \$150.00/\text{ton} \times 3,333 \text{ tons} &= \$499,950.00 \end{aligned}$$

Total disposal cost of residual slag = \$598,273.50

3. Maximum quantity of inventory to be removed for reuse.

a. Paste Storage Area 3:

$$\begin{aligned} 95'l \times 80'w \times 12'h &= 91,200 \text{ ft}^3 \\ 91,200 \text{ ft}^3 / 27 \text{ ft}^3/\text{yd}^3 &= 3,377.8 \text{ yd}^3 \\ 3,377.8 \text{ yd}^3 \times 1.8 \text{ tons}/\text{yd}^3 &= 6,080 \text{ tons} \end{aligned}$$

b. Dry paste storage -

$$\begin{aligned} \text{Area 4: } 50'l \times 50'h \times 12'h &= 30,000 \text{ ft}^3 \\ 30,000 \text{ ft}^3 / 27 \text{ yd}^3 &= 1,111.11 \text{ yd}^3 \\ 1,111.11 \text{ yd}^3 \times 1.7 \text{ tons}/\text{yd}^3 &= 1,888 \text{ tons, round to 2,000.00 tons} \end{aligned}$$

$$\begin{aligned} \text{Area 5: } 100'l \times 25'h \times 12'h &= 30,000 \text{ ft}^3 \\ 30,000 \text{ ft}^3 / 27 \text{ yd}^3 &= 1,111.11 \text{ yd}^3 \\ 1,111.11 \text{ yd}^3 \times 1.7 \text{ tons}/\text{yd}^3 &= 1,888 \text{ tons, round to 2,000.00 tons} \end{aligned}$$

$$\begin{aligned} \text{Area 6: } 100'l \times 25'h \times 12'h &= 30,000 \text{ ft}^3 \\ 30,000 \text{ ft}^3 / 27 \text{ yd}^3 &= 1,111.11 \text{ yd}^3 \\ 1,111.11 \text{ yd}^3 \times 1.7 \text{ tons}/\text{yd}^3 &= 1,888 \text{ tons, round to 2,000.00 tons} \end{aligned}$$

Total inventory to be removed = 12,080 tons

Total capacity of the Containment Building = 7,614.81 yd³ as listed in the RCRA Part A Permit Application, January 1999.

4. Unit cost of inventory disposal.

Loading: \$2.00/ton x 12,080 tons = \$24,160.00

Transportation: \$ 18.00/ton x 12,080 tons = \$217,440.00

Total cost of inventory disposal = \$241,600.00

B. DECONTAMINATION OF CONTAINMENT BUILDING

1. Total surface area to be decontaminated:

Area 1 Floor: 100'l x 25'w = 2,500 ft²

Area 1 Walls: 150'l x 10'h = 1,500 ft²

Area 2 Floor: 70'l x 45'w = 3,150 ft²

Area 2 Walls: 125'l x 12'h = 1,500 ft²

Area 3 Floor: 95'l x 80'w = 7,600 ft²

Area 3 Walls: 200'l x 12'h = 2,400 ft²

Area 4 Floor: 50'l x 50'w = 2,500 ft²

Area 4 Walls: 100'l x 12'h = 1,200 ft²

Area 5 Floor: 100'l x 25'w = 2,500 ft²

Area 5 Walls: 100'l x 12'h = 1,200 ft²

Area 6 Floor: 100'l x 25'w = 2,500 ft²

Area 6 Walls: 100'l x 12'h = 1,200 ft²

29,750 ft² = Total surface area

Plus, 42,000 ft² of production area and 9,000 ft² trackways = 80,750 ft²

2. Unit cost of decontamination.

Crew = 1 supervisor (\$37.00/hour) and 20 laborers (\$18.00/hour each)

100ft²/hour x 20 laborers = 2,000ft²/hour

80,750ft² / 2,000ft²/hour = 41 hours

Plus 5 hour for equipment decontamination

46 hours x \$397.00/hour = \$18,262.00

Sweeper = 1 laborer (\$18.00) x 10 hours = \$180.00

Total cost for decontamination = \$ 18,442.00

C. DISPOSAL OF WASH WATER

1. Volume of water generated during decontamination.

High pressure wash = 4.0 gallons per ft²

80,750ft² x 4.0 gallons per ft² = 323,000 gallons

Equipment decontamination = 1,500 gallons

Total amount of waste water = 324,500 gallons

2. Water characterization.

Water samples: 1 sample every 5,000 gallons
Sampling crew charge = \$50.00 / water sample
324,500 gallons / 5,000 gallons/sample = 65 water samples
65 water samples x \$50.00/sample = \$3,250.00

3. Transportation of wash water.

324,500 gallons / 5,000 gallons/load = 65 loads
65 loads x \$326.00/load = \$21,190.00

4. Disposal of wash water.

324,500 gallons x \$0.15/gallon = \$48,675.00

Total cost for disposal of wash water = \$ 73,115.00

D. PERSONAL PROTECTIVE EQUIPMENT

1. **\$45.00 per man x 21 man crew x 13 days = \$12,285.00**

E. CONFIRMATION SAMPLING

1. Concrete core samples: 1 sample every 900ft²
Floor area = 2,500 + 3,150 + 2,500 + 2,500 + 2,500 + 42,000 + 9,000
= 64,150 sf
64,150ft² / 900ft²/sample = 71 samples
Paste Storage area: 1 sample every 400 ft²
7,600 ft² / 400 ft² = 19 samples
Sampling crew charge = \$650.00 / concrete core sample
90 concrete core samples x \$650.00/sample = \$58,500.00

2. Laboratory analysis (lead).

65 water samples x \$18.00/sample = \$1,170.00
90 concrete core samples x \$20.00/sample = \$1,800.00
QA/QC samples (3 water and 4 soil) = \$134.00

Total cost for confirmation sampling = \$61,604.00

F. EQUIPMENT LEASE

1. 2 Front end loaders x \$125.00 each = \$250.00
2. 20 Steam Cleaners x \$180.00 each x 2 weeks = \$7,200.00
3. 1 Hoe Ram x \$400.00 each = \$400.00
4. 1 Sweeper truck x \$1,300.00 = \$1,300.00

Total cost for equipment lease = \$9,150.00

G. CLOSURE CERTIFICATION

Lump Sum = \$9,000.00

CONTAINMENT BUILDING TOTAL CLOSURE COSTS = \$1,023,469.50

Inflation adjustment for 2001 – 2.5 % = \$1,049,056.24

Inflation adjustment for 2002 – 2.5 % = \$1,075,282.64

Inflation adjustment for 2003 – 2.4% = \$1,101,089.43

TABLE 1C

SUPPLEMENTAL CLOSURE COST INFORMATION TRUCK/TRAILER STORAGE AREA

A. INVENTORY DISPOSAL

1. Maximum quantity of inventory to be removed for reuse.

85,000 batteries on pallets stored on trucks or trailers.

1 battery = 1 gallon. Total capacity = **85,000 gallons – As listed in RCRA Part A Permit Application, January 1999.**

2. Unit cost for inventory removal.

Loading batteries: 85,000 batteries x \$0.01/battery = \$850.00

Transportation: 85,000 batteries x \$0.42/battery = \$35,700.00

Total cost for inventory removal = \$36,550.00

B. DECONTAMINATION OF TRUCK/TRAILER STORAGE AREA

1. Total surface area to be decontaminated.

120'w x 120'l = 14,400ft² of surface area to be decontaminated.

2. Unit cost of decontamination.

Crew = 1 supervisor (\$37/hour) and 4 laborers (\$18.00/hour each)

600ft²/hour x 4 laborers = 2,400ft²/hour 14,400ft² / 2,400ft²/hour = 6 hours

6 hours x \$109.00 = 654.00

Total cost for decontamination = \$ 654.00

C. DISPOSAL OF WASH WATER

1. Volume of water generated during decontamination.

High pressure wash = 1.2 gallons per ft²

14,400ft² x 1.2 gallons per ft² = 17,280 gallons

2. Water samples: 1 sample every 5,000 gallons

Sampling crew charge = \$50.00 / water sample

17,280 gallons / 5,000 gallons/sample = 4 water samples

4 water samples x \$50.00/sample = \$200.00

3. Transportation of wash water.

17,280 gallons / 5,000 gallons/load = 4 loads
4 loads x \$326.00 = \$1,304.00

4. Disposal of wash water.

17,280 gallons x \$0.15/gallon = \$2,592.00

Total cost for disposal of wash water = \$ 4,096.00

D. PERSONAL PROTECTIVE EQUIPMENT

1. \$45.00 per man x 5 man crew = \$225.00

E. CONFIRMATION SAMPLING

1. Concrete core samples: 1 sample every 1,000ft²
14,400ft² / 1,000ft²/sample = 15 samples
Sampling crew charge = \$500.00 / concrete core sample
15 concrete core samples x \$500.00/sample = \$7,500.00

2. Laboratory analysis (lead).

4 water samples x \$18.00/sample = \$72.00
15 concrete core samples x \$20.00/sample = \$300.00
QA/QC samples (1 water and 1 soil) = \$38.00

Total cost for confirmation sampling = \$7,910.00

F. EQUIPMENT LEASE

4 Steam cleaners: 4 x \$45.00 = \$180.00

G. CLOSURE CERTIFICATION

Lump Sum = \$3,500.00

TRUCK/TRAILER STORAGE AREA TOTAL CLOSURE COSTS = \$53,115.00

Inflation adjustment for 2001 – 2.5% = \$54,442.88

Inflation adjustment for 2002 – 2.5% = \$55,803.95

Inflation adjustment for 2003 – 2.4% = \$57,143.24

TABLE 1D

SUPPLEMENTAL CLOSURE COST INFORMATION WHOLE BATTERY STORAGE AREA

A. INVENTORY DISPOSAL

1. Maximum quantity of inventory to be removed for reuse.

$$75'w \times 100'l = 7,500ft^2$$

$$20 \text{ rows} \times 18 \text{ pallets per row} \times 3 \text{ pallets high} = 1,080 \text{ pallets}$$

$$1,080 \text{ pallets} \times 75 \text{ batteries per pallet} = 81,000 \text{ batteries}$$

1 battery = 1 gallon. Total capacity = **81,000 gallons – As listed in RCRA Part A Permit Application, January 1999.**

2. Unit cost for inventory removal.

$$\text{Loading: } 81,000 \text{ batteries} \times \$0.05/\text{battery} = \$4,050.00$$

$$\text{Transportation: } 81,000 \text{ batteries} \times \$0.42/\text{battery} = \$34,020.00$$

Total cost for inventory removal = \$38,070.00

B. DECONTAMINATION OF WHOLE BATTERY STORAGE AREA

1. Total surface area to be decontaminated.

$$750'w \times 100'l = 7,500ft^2 \text{ of surface area to be decontaminated.}$$

2. Unit cost of decontamination.

Crew = 1 supervisor (\$37/hour) and 3 laborers (\$18.00/hour each)

$$600ft^2/\text{hour} \times 3 \text{ laborers} = 1,800ft^2/\text{hour}$$

$$7,500ft^2 / 1,800ft^2/\text{hour} = 4 \text{ hours}$$

Equipment decontamination = 1 hour

$$5 \text{ hours} \times \$91.00 = \$455.00$$

Total cost for decontamination = \$ 455.00

C. DISPOSAL OF WASH WATER

1. Volume of water generated during decontamination.

$$\text{High pressure wash} = 1.2 \text{ gallons per } ft^2$$

$$7,500ft^2 \times 1.2 \text{ gallons per } ft^2 = 9,000 \text{ gallons}$$

Equipment decontamination = 500 gallons

Total amount of waste water = 9,500 gallons

2. Water samples: 1 sample every 5,000 gallons
Sampling crew charge = \$50 / water sample
 $9,500 \text{ gallons} / 5,000 \text{ gallons/sample} = 2 \text{ water samples}$
 $2 \text{ water samples} \times \$50.00/\text{sample} = \$100.00$

3. Transportation of wash water.

$$9,500 \text{ gallons} / 5,000 \text{ gallons/load} = 2 \text{ loads}$$
$$2 \text{ loads} \times \$326.00 = \$652.00$$

4. Disposal of wash water.

$$9,500 \text{ gallons} \times \$0.15/\text{gallon} = \$1,425.00$$

Total cost for disposal of wash water = \$ 2,177.00

D. PERSONAL PROTECTIVE EQUIPMENT

1. **\$45.00 per man x 4 man crew = \$180.00**

E. CONFIRMATION SAMPLING

1. Concrete core samples: 1 sample every 1,000ft²
 $7,500\text{ft}^2 / 1,000\text{ft}^2/\text{sample} = 8 \text{ samples}$
Sampling crew charge = \$500.00 / concrete core sample
 $8 \text{ concrete core samples} \times \$500.00/\text{sample} = \$4,000.00$

2. Laboratory analysis (lead).

$$2 \text{ water samples} \times \$18.00/\text{sample} = \$36.00$$
$$8 \text{ concrete core samples} \times \$20.00/\text{sample} = \$160.00$$
$$\text{QA/QC samples (1 water and 1 soil)} = \$38.00$$

Total cost for confirmation sampling = \$4,234.00

F. EQUIPMENT LEASE

1. 1 Fork lift = \$75.00
2. 3 Steam cleaners: $3 \times \$45.00 = \135.00

Equipment lease total = \$210.00

G. CLOSURE CERTIFICATION

Lump sum = \$3,500.00

WHOLE BATTERY STORAGE AREA TOTAL CLOSURE COSTS = \$48,826.00

Inflation adjustment for 2001 – 2.5% = \$50,046.65

Inflation adjustment for 2002 – 2.5% = \$51,297.81

Inflation adjustment for 2003 – 2.4% = \$52,528.96

TABLE 2

POST CLOSURE CARE COST ESTIMATE

Description	Units	Unit Cost	Total Yearly Cost
TWO CLOSED WASTE PILES			
1 Cover Maintenance			
a. Top Soil Maintenance (5 acres)	5	\$100.00	\$500.00
b. Fertilizing and Reseeding (5 acres)	5	\$60.00	\$300.00
c. Grass Cutting and Upkeep (\$40.00/acre x 4 events)	5	\$160.00	\$800.00
d. Engineer's Inspection	1	\$300.00	\$300.00
Subtotal			\$1,900.00
TOTAL (28 years of Post-Closure Monitoring)	28	\$1,900.00	\$53,200.00
2 Groundwater Monitoring (7 Wells)			
a. Purging and Sampling (Twice a Year at \$50.00 per well)	7	\$100.00	\$700.00
b. Laboratory Analysis (Twice a Year at \$110.00 per well)	8*	\$220.00	\$1,760.00
c. Annual Report	1	\$500.00	\$500.00
Subtotal			\$2,960.00
TOTAL (28 years of Post-Closure Monitoring)	28	\$2,960.00	\$82,880.00
3 LDEQ Annual Monitoring and Maintenance Fee	7	\$250.00	\$1,750.00
TOTAL (28 years of Post-Closure Monitoring)	28	\$1,750.00	\$49,000.00
POST-CLOSURE COSTS - CLOSED WASTE PILES			\$185,080.00
Plus 10% Contingency			\$18,508.00
TOTAL POST-CLOSURE COSTS			\$203,588.00

* Cost includes analyzing 1 duplicate sample.

Inflation adjustment for 2001 (2.5%)

\$208,677.70

Inflation adjustment for 2002 (2.5%)

\$213,894.64

Inflation adjustment for 2003 (2.4%)

\$219,028.11

Belden shale and fire clay chemical resistant brick offer engineers a wide range of utility in environments that have aggressive corrosive conditions at elevated temperatures.

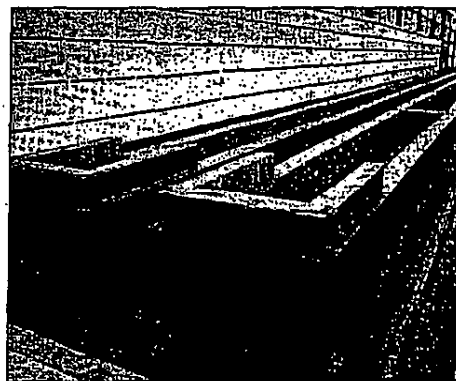
Chemical resistant masonry construction is designed to protect containment tanks and vessels made of steel, concrete, ordinary masonry, fiber-reinforced polyesters and the like. Chemical resistant brick provides thermal, mechanical, and chemical protection for these kinds of structures.

of corrosion resistance can provide the same level of cost effective protection in wet areas where acid concentrations vary from 2% to 98% and at high temperatures, as the three component system using chemical resistant brick and mortar with a membrane backing.

- **Usage flexibility without sensitivity to minor changes in chemical processes, and applicability for many different processes.**
- **Cost savings: where alloys and special metals become uneconomical because of accelerated chemical attack at high temperatures, chemical resistant brick liners inside the vessel can lower temperatures and concentration levels, making it feasible to use less expensive alloys.**

- Repairability compared to the finite durability of alloys.
- Insulation inside a vessel is less susceptible to damage than is external insulation.
- Cooler operation reduces degree of external protection necessary for worker safety.

Belden chemical resistant brick, backed by more than 100 years of brick making experience, are manufactured of specially selected American shales and fire clays. These are fine-ground and specifically formulated for density and strength and fired at over 2000° F. This process results in brick that resists virtually all corrosive liquids and gasses, except for acid fluorides and strong hot caustics.

[illegible]

APPENDIX G

ACID BRICK, EPOXY ADHESIVE, MORTAR, AND EXPANSION JOINT FILLER SPECIFICATIONS



Delta Testing And Inspection, Inc.

1855 Mason Avenue - Baton Rouge, Louisiana 70805-1034 (225) 356-4355

REPORT OF CONCRETE 6" X 12" CYLINDERS

11/13/2003

Client: Group Contractors, Inc.

Report Number: 2

Through:

Service Date: 11/10/2003

P. O. Box 83560

Order Number: DBR-11046

Baton Rouge, La 70884

Job Number: 1003006-1009

Attn:

Type of Service: Testing Of Submitted Samples

Project: Exide Containment Bldg.

Project Information

Engineer:

Architect:

Contractor: Group Contractors, Inc.

Date Placed: 11/10/2003

Supplier: Dolese

Mix Used:

Strength: 4000 PSI @ 28 Days

Slump Range:

Yards Placed:

Location: Slab

Test Information

Field Test Information

Tests Performed By Technician: Submitted

Cyl	Set	Truck	Ticket	Conc	Temp	%Air	Unit	Yards
No	No	No	No	C-1064	Temp	C-143	C-231	C-138

Laboratory Test Information ASTM C-39

Sample	Set	Age,	Date	Load Lbs	AreaSq	Strength	Type	Cylinder
Mark	No	Days	Tested	C-39	Inch	PSI	Fail	Diameter
2A	1	2	11/12/2003	164,404	28.27	5,820		6.00

Samples were received in our laboratory on 11/12/2003. Samples were cured and tested in accordance with ASTM Standards for the materials tested.

Copies Sent To:

Delta Testing And Inspection, Inc.

Michael P. McGowan, Vice President

Michael P. McGowan

Kirk.

Delta Testing And Inspection, Inc.

1855 Mason Avenue - Baton Rouge, Louisiana 70805-1034 (225) 356-435

REPORT OF CONCRETE 6" X 12" CYLINDERS

11/07/2003

Client: Group Contractors, Inc.

Report Number: 1

Through:

Service Date: 11/05/2003

P. O. Box 83560

Order Number: DBR-11046

Baton Rouge, La 70884

Job Number: 1003006-1009

ARLON SIMONEAUX, LL

Attn:

Type of Service: Testing Of Submitted Samples

RECEIVED

Project: Exide Cont. Bldg

Project Information

Engineer:

Architect:

Contractor: Group Contractors, Inc.

Date Placed: 11/05/2003

Supplier:

Mix Used:

Strength: 4000 P S I @ 28 Days

Slump Range:

Yards Placed:

Location: Driveway

Test Information

Field Test Information

Tests Performed By Technician: Submitted

Cyl	Set	Truck	Ticket	Conc	Slump,	%Air	Unit	Yards
No	No	No	No	Temp	Air	Inches	Weight	Time
				Temp	Temp	C-143	C-231	Sampled
1				C-1064			C-138	Sampled

Laboratory Test Information ASTM C-39

Sample	Set	Age,	Date	Load Lbs	Area Sq	Strength	Type	Cylinder
Mark	No	Days	Tested	C-39	Inch	PSI	Fail	Diameter
1A	1	1	11/06/2003	154,692	28.27	5,470		8.00

Samples were received in our laboratory on 11/06/2003. Samples were cured and tested in accordance with ASTM Standards for the materials tested.

Copies Sent To:

Delta Testing And Inspection, Inc.

Michael P. McGowan, Vice President

APPENDIX F

CONCRETE COMPRESSION TESTING RESULTS

SAMPLE LIMITED WARRANTY

PROJECT: Exide Technologies
LOCATION: Baton Rouge, LA
HDPE LINER

OWNER: Exide Technologies
CONTRACT AMOUNT: TBD
COMPLETION DATE: TBD

COMANCO ENVIRONMENTAL CORPORATION ("COMANCO"), subject to the terms and conditions set forth below, warrants the above referenced installation shall be installed free from defects in workmanship for a period of one (1) year from the date the installation is completed. This LIMITED WARRANTY extends only to the proper installation of the lining system and does not include damages or defects in the installation caused by entities other than COMANCO, or resulting from Acts of God, or casualty, or catastrophe, including but not limited to, earthquakes, fire, floods, hail, tornados, hurricanes, tropical storms, gale force winds, other events of force majeure or vandalism. Further, this LIMITED WARRANTY does not include damages or defects in the installation resulting from exposure to harmful chemicals, abuse by machinery, equipment or people, excessive pressures or stresses from any source, subsurface or overburdened soil conditions, total or differential soil settlements, or any other cause not within COMANCO's control.

The extent of COMANCO's liability for breach of this LIMITED WARRANTY shall be limited to repairing or replacing the defective installation workmanship that will result in providing the OWNER with the pro-rated performance remaining under the original period of this LIMITED WARRANTY. COMANCO shall have the right to inspect and determine the cause of any alleged defect in the installation and to take appropriate steps to repair or replace the installation workmanship if a defect exists and is within the terms of this LIMITED WARRANTY.

This LIMITED WARRANTY will not be effective unless COMANCO receives written notice, by certified mail, to the PRESIDENT of COMANCO within ninety (90) days after the alleged defect is first discovered, or should have been discovered by the OWNER. Should the required notice not be given, the defect and all warranties shall be deemed to have been waived by OWNER, and OWNER shall have no right of recovery against COMANCO. In the event repairs or replacement are to be effected, said repairs and/or replacements shall not become due until the area subject to repair or replacement is made available to COMANCO in a clean, dry and unencumbered condition. This includes, but is not limited to, the repair or replacement area being free from all water, dirt, sludge, waste, residuals, liquids, or overlying material of any kind. In no event will COMANCO be liable for any costs expended by any person or entity other than COMANCO on any defective work with respect to the installation. Any repairs, replacements or alterations which affect COMANCO's original installation work will VOID this LIMITED WARRANTY.

Notwithstanding anything herein to the contrary, COMANCO's liability under this LIMITED WARRANTY shall in no event exceed the Contract Amount above state. Further, under no circumstances shall COMANCO be liable for any special, direct, indirect or consequential damages arising from loss of production or product, or any other losses, including losses due to personal injuries and product liability owing to the failure of the material or installation. OWNER shall be deemed to have waived its rights under this LIMITED WARRANTY with respect to any repairs, replacements or alterations made by OWNER without the express written consent of COMANCO.

COMANCO neither assumes nor authorizes any person other than an officer of COMANCO to assume for it any other or additional liability in connection with the installation. This LIMITED WARRANTY is extended to the property OWNER only. No rights against COMANCO will survive an attempted transfer or assignment to any party who does not own the property.

The LIMITED WARRANTY herein is given in lieu of all warranties of merchantability, fitness for purpose, or other warranties or representations, expressed or implied. By accepting the installation, OWNER waives all other such possible warranties or representations, except those specifically given herein. Correction of nonconformities, in the manner and for the period of time provided above, shall constitute fulfillment of all liabilities of COMANCO to OWNER, whether based on contract, negligence, strict liability or otherwise with respect to or arising out of the installation of the lining system. The parties hereto expressly agree that the sale hereunder is for commercial or industrial use only. Warranties, if any, concerning the materials incorporated into the lining system are covered, if at all, by separate warranties from the manufacturers or suppliers of such materials and are expressly excluded from the scope of this LIMITED WARRANTY, and OWNER acknowledges and agrees that COMANCO has made no warranties or representations to it concerning either the availability or sufficiency of any such warranties or representations from manufacturers or suppliers.

Except as expressly stated above, COMANCO makes no warranty of any kind and hereby disclaims all warranties with respect to the installation of the lining system, both expressed and implied, including, but not limited to, implied warranties or merchantability and fitness for a particular purpose.

No terms or conditions other than those stated herein and no agreement or understanding, oral or written, and no course of conduct or performance in any way purporting to modify this LIMITED WARRANTY or to waive COMANCO's rights hereunder shall be binding on COMANCO unless the same shall be clearly described in writing that refers to this LIMITED WARRANTY and is signed by an officer of COMANCO. Additional liabilities created by other documents shall have no force or effect upon this LIMITED WARRANTY or the installation performed by COMANCO. The laws of the STATE OF FLORIDA will govern the rights and duties of the parties under this LIMITED WARRANTY.

COMANCO ENVIRONMENTAL CORPORATION:

BY: T. R. JOHNSON

TITLE: CHIEF EXECUTIVE OFFICER

SIGNED: _____

DATED: _____



GSE STANDARD PRODUCTS

Product Data Sheet

GSE Nonwoven Geotextiles

GSE Nonwoven Geotextiles is a family of polypropylene, staple fiber, nonwoven needle punched geotextiles. Manufactured using an advanced manufacturing and quality system, these products are the most uniform and consistent nonwoven needle punched geotextile currently available in the industry. GSE combines a fiber selection and approval system with in-line quality control and a state-of-the-art laboratory to ensure that every roll shipped meets customer specifications. The company has performed extensive performance testing to evaluate suitability of its nonwovens for various applications. GSE Nonwoven Geotextiles are available in a range of weights to meet your specific project needs. *These product specifications meet or exceed GRI GT12.*

Product Specifications

TESTED PROPERTY	TEST METHOD	FREQUENCY	NW4	NW6	NW8	NW10	NW12	NW16
Product Code			GEO 0408002	GEO 0608002	GEO 0808002	GEO 1008002	GEO 1208002	GEO 1608002
Mass per Unit Area, oz/yd ² (g/m ²)	ASTM D 5261	90,000 ft ²	4 (135)	6 (200)	8 (270)	10 (335)	12 (405)	16 (540)
Grab Tensile Strength, lb (N)	ASTM D 4632	90,000 ft ²	120 (530)	170 (755)	220 (975)	260 (1,155)	320 (1,420)	390 (1,735)
Grab Elongation, %	ASTM D 4632	90,000 ft ²	50	50	50	50	50	50
Puncture Strength, lb (N)	ASTM D 4833	90,000 ft ²	60 (265)	90 (395)	120 (525)	165 (725)	190 (835)	240 (1,055)
Trapezoidal Tear Strength, lb (N)	ASTM D 4533	90,000 ft ²	50 (220)	70 (310)	95 (420)	100 (445)	125 (555)	150 (665)
Apparent Opening Size, Sieve No. (mm)	ASTM D 4751	540,000 ft ²	70 (0.212)	70 (0.212)	80 (0.180)	100 (0.150)	100 (0.150)	100 (0.150)
Permittivity, sec ⁻¹	ASTM D 4491	540,000 ft ²	1.50	1.50	1.50	1.20	0.80	0.70
Permeability, cm/sec	ASTM D 4491	540,000 ft ²	0.22	0.30	0.30	0.30	0.29	0.27
Water Flow Rate, gpm/ft ² (l/min/m ²)	ASTM D 4491	540,000 ft ²	120 (4,885)	110 (4,480)	110 (4,480)	85 (3,460)	60 (2,440)	50 (2,035)
UV Resistance (% retained after 500 hours)	ASTM D 4355	per formulation	70	70	70	70	70	70
Roll Length, ft (m)			600 (182)	600 (182)	600 (182)	300 (91)	300 (91)	300 (91)
Roll Width, ft (m)			15 (4.6)	15 (4.6)	15 (4.6)	15 (4.6)	15 (4.6)	15 (4.6)
Roll Area, ft ² (m ²)			9,000 (836)	9,000 (836)	9,000 (836)	4,500 (418)	4,500 (418)	4,500 (418)

NOTES:

- The property values listed are in weaker principal direction. All values listed are Minimum Average Roll Values (MARV) except apparent opening size in mm and UV resistance. Apparent opening size (mm) is a Maximum Average Roll Value. UV is a typical value.

DS037 R04/17/03

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Americas
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Asia/Pacific

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Fax: 66-2-937-0097

This product data sheet is also available on our website at:

www.gseworld.com



GSE STANDARD PRODUCTS

Product Data Sheet

GSE HyperNet Geonets

GSE HyperNet geonets are synthetic drainage materials manufactured from a premium grade high density polyethylene (HDPE) resin. The structure of the HyperNet geonet is formed specifically to transmit fluids uniformly under a variety of field conditions. HDPE resins are inert to chemicals encountered in most of the civil and environmental applications where these materials are used. GSE geonets are formulated to be resistant to ultraviolet light for time periods necessary to complete installation. GSE HyperNet geonets are available in standard, HF, HS, and UF varieties.

The table below provides index physical, mechanical and hydraulic characteristics of GSE geonets. Contact GSE for information regarding performance of these products under site-specific load, gradient, and boundary conditions.

Product Specifications

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM AVERAGE ROLL VALUE ^{1d}			
			HyperNet	HyperNet HF	HyperNet HS	HyperNet UF
Product Code			XL4000N004	XL5000N004	XL7000N004	XL8000N004
Transmissivity ^{1a} , gal/min/ft (m ³ /sec)	ASTM D 4716-00	1/540,000 ft ²	9.66 (2 x 10 ⁻³)	14.49 (3 x 10 ⁻³)	28.98 (6 x 10 ⁻³)	38.64 (8 x 10 ⁻³)
Thickness, mil (mm)	ASTM D 5199	1/50,000 ft ²	200 (5)	250 (6.3)	275 (7)	300 (7.6)
Density, g/cm ³	ASTM D 1505	1/50,000 ft ²	0.94	0.94	0.94	0.94
Tensile Strength (MD), lb/in (N/mm)	ASTM D 5035	1/50,000 ft ²	45 (7.9)	55 (9.6)	65 (11.5)	75 (13.3)
Carbon Black Content, %	ASTM D 1603, modified	1/50,000 ft ²	2.0	2.0	2.0	2.0
Roll Width, ft (m)			15 (4.6)	15 (4.6)	15 (4.6)	15 (4.6)
Roll Length, ft (m) ^{1b}			300 (91)	250 (76)	220 (67)	200 (60)
Roll Area, ft ² (m ²)			4,500 (418)	3,750 (348)	3,300 (305)	3,000 (278)

NOTES:

- ^{1a}Gradient of 0.1, normal load of 10,000 psf, water at 70° F (20° C), between steel plates for 15 minutes.
- ^{1b}Please check with GSE for other available roll lengths.
- ^{1d}These are MARY values that are based on the cumulative results of specimens tested by GSE.

DS017 R07/07/03

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Americas	GSE Lining Technology, Inc.	Houston, Texas	800-435-2008	281-443-8564	Fax: 281-238-8650
Europe/Middle East/Africa	GSE Lining Technology GmbH	Hanberg, Germany		49-40-767420	Fax: 49-40-7674233
Asia/Pacific	GSE Lining Technology Company Ltd.	Bangkok, Thailand		66-2-937-0091	Fax: 66-2-937-0097

This product data sheet is also available on our website at:

www.gseworld.com



GSE STANDARD PRODUCTS

Product Data Sheet

GSE Conductive

GSE Conductive is a patented, spark-testable HDPE geomembrane that is made of a thin layer [approximately 3 mils (0.075 mm)] of electrically conductive carbon black that is installed on the conductive side of the deployed sheet. This conductive layer is part of the total thickness, the remainder of which is a standard carbon black stabilized primary layer of high density (HDPE). GSE Conductive can be easily tested for post-installation damage using equipment capable of performing spark testing in the field. Variations of this product include a black or white textured upper surface and a smooth white upper surface. *These product specifications meet or exceed GRI GM13.*

Product Specifications

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM VALUE			
Product Code			HDC 040A000	HDC 060A000	HDC 080A000	HDC 100A000
Thickness, mils (mm)	ASTM D 5199	every roll	36 (0.91)	54 (1.4)	72 (1.8)	90 (2.3)
Density, g/cm ³	ASTM D 1505	200,000 lb	0.94	0.94	0.94	0.94
Tensile Properties (each direction) ¹	ASTM D 6693, Type IV	20,000 lb				
Strength at Break, lb/in-width (N/mm)	Dumbbell, 2 ipm		162 (28)	243 (43)	324 (57)	405 (71)
Strength at Yield, lb/in-width (N/mm)			84 (15)	130 (23)	173 (30)	216 (38)
Elongation at Break, %	G.L. = 2.0 in (51 mm)		700	700	700	700
Elongation at Yield, %	G.L. = 1.3 in (33 mm)		13	13	13	13
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	28 (125)	42 (187)	56 (249)	70 (311)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	79 (352)	119 (530)	158 (703)	198 (881)
Carbon Black Content ² , %	ASTM D 1603	20,000 lb	2.0	2.0	2.0	2.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	+Note 1	+Note 1	+Note 1	+Note 1
REFERENCE PROPERTY	TEST METHOD	FREQUENCY	NOMINAL VALUE			
Thickness, mils (mm)	ASTM D 5199	every roll	40 (1.0)	60 (1.5)	80 (2.0)	100 (2.5)
Oxidative Induction Time, minutes	ASTM D 3895, 200° C; O ₂ , 1 atm	200,000 lb	>100	>100	>100	>100
Roll Length (approximate), ft (m)			870 (265)	560 (171)	430 (131)	340 (104)
Roll Width, ft (m)			22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)
Roll Area, ft ² (m ²)			19,575 (1,819)	12,600 (1,171)	9,675 (899)	7,650 (711)

NOTES:

- +Note 1: Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- GSE Conductive is available in rolls weighing about 3,900 lb (1,769 kg).
- ¹Due to surface effects caused by the conductive layer, these tensile properties are minimum average values.
- ²GSE Conductive may have an overall carbon black percentage above 3.0% due to the high carbon black loadings in the conductive layer.
- All GSE geomembranes have dimensional stability of ±2% when tested with ASTM D 1204 and IIB of <77° C when tested with ASTM D 746.

DS008 R06/30/03

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Comanco Environmental Corporation

Project Completion Report

Sold To: _____ Project Name: Exide Technologies
Project Number: 03-1210
Date Complete: 11-8-03

FINAL QUANTITIES

ITEM	DESCRIPTION	QUANTITY	NOTES
	80 mil HDPE	5,766' SF	
	GEONET	5,369 SF	
	12 OZ GEOTEXTILE	5,369 SF	
	S.S BATTEN BAR	215 L.F	
	ANCHOR-LOC	91 L.F	

COMANCO MATERIALS LEFT ON SITE

DESCRIPTION	QUANTITY	NOTES

LIST ALL ROLL NUMBERS ON THE MATERIAL REPORT AND ATTACH TO THIS REPORT

DID YOU HAVE FIELD CHANGE ORDERS _____ HOW MANY:
THIS JOB IS 100% DONE ☐ IF NOT, EXPECTED RETURN DATE: _____

Notes: _____

The project has been left in a clean, orderly fashion acceptable to the customer.

(INITIALS) (DATE)

THE WORK IS COMPLETE, SATISFACTORY, QUANTITIES AGREED TO AND ACCEPTED BY

Arnulfo Martinez

COMANCO SUPERINTENDENT SIGNATURE

11-8-03

DATE

Duke Brown

AUTHORIZED SIGNATURE

11-8-03

Super.

TITLE

Group

COMPANY

11-8-03

DATE

Daily Installation Report

Superintendent: Arnulfo Martinez

Date: 11-7-03

Job Number: 03-1210

Day# 3

Days Remaining

Days Estimated	6
-----------------------	----------

WEATHER:

Rain/ AM *OK* PM
Snow

Temp AM 02 PM 0K

Wind AM 012 PM 014

Notes

Supt:

Technicians

Temporary Labor

Number of Men	Daily Installation Hours	Daily Driving Hours	Daily Travel Man Hours	Total Daily Man Hours Used
1	10	1		11
4	40			40
Total Man Hours:	50	1		51

Totals must match time sheets

Code	Material / Description	Units	Estimated Quantity	Quantity Installed Today	Man Hours Today	Total Quantity Installed to Date	Total MH Used To Date.
	80 mil HDPE	SF	5,700	5,700	35	5,700	70
	GEONET	SF	5,700	5,700		5,700	20
	12 OZ GEOTEXTILE	SF	5,700				
	S.S. BATTEN	LF	215	215		215	80
	ANCHOR-LOC	LF	91	91	15	91	15
Combined Total Driving and Travel Hours Today					1	Driving/Travel Hours To Date	83
Change Order Hours Today						Change Order Hours To Date	
Total MH Today					51	Total MH To Date	268

Change Order #	Change Order Description of Materials Used	Units	Total Quantity

NOTES / PROBLEMS / STAND-BY

DAILY INSTALLATION REPORT

COMANCO ENVIRONMENTAL CORPORATION

Seam Control Form

Project Name:

Exide Technologies

Job #

03-1210

Superintendent:

Arnulfo Martinez

Page

1

Material Type:

80 Mil HDPE

Primary

X

Cell

Pond

Pad

Air Pressure Test

30

PSI

Job Description:

Secondary

Pond

Pad

Air Pressure Hold Time

5

Minutes

Reported By

FRANCISCO BAILÓN

Other Secondary Cont.

Pond

Pad

Allowable Air Pressure Loss

3

PSI

Weld Date	Seam No.	Seam Length	Time Welded	Operator Name/ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Amb Temp	Test Date	Test Type	Air Test Time In	Air Test Time Out	Test Results
11-08-03	4/5	22'	8:30 A.M.	FRANCISCO BAILÓN	74-35		450°	400°		11-08-03	V.T.	:	:	P
	5/6	22'	10:05 A.M.	FRANCISCO BAILÓN	74-35		450°	400°			V.T.	:	:	P
	3/6	14'	11:10 A.M.	FRANCISCO BAILÓN	74-35		450°	400°			V.T.	:	:	P
	3/5	22'S	11:25 A.M.	FRANCISCO BAILÓN	74-35		450°	400°			V.T.	:	:	P
	3/4	22'S	1:30 P.M.	FRANCISCO BAILÓN	74-35		450°	400°			V.T.	:	:	P
	2/4	18'	2:45 P.M.	FRANCISCO BAILÓN	74-35		450°	400°			V.T.	:	:	P
	1/4	22'S	4:15 P.M.	FRANCISCO BAILÓN	74-35		450°	400°			V.T.	:	:	P
	1/5	22'S	4:40 P.M.	FRANCISCO BAILÓN	74-35		450°	400°			V.T.	:	:	P
11-08-03	1/6	14'	5:10 P.M.	FRANCISCO BAILÓN	74-35		450°	400°		11-08-03	V.T.	:	:	P
		379'												
11-08-03	6	EMBED 90'	8:15 A.M.	FRANCISCO BAILÓN	74-35		450°	450°		11-08-03				

469' LF EXTENSION

Project Name:	Exide Technologies	Job #	03-1210	Superintendent:	Arnulfo Martinez	Page
Material Type:	80 Mil HDPE	Primary	X	Cell	Peel Test Extrusion Minimum	78 PPI
Job Description:		Secondary		Pond	Peel Test Fusion Minimum	78 PPI
Reported By		Other		Pad	Shear Test Minimum	120 PPI

[illegible]

COMANCO ENVIRONMENTAL CORPORATION

Preweld Test Report

Project Name: Exide Technologies Job # 03-1210 Superintendent: Arnulfo Martinez Page 78

Material Type: 80 mil HDPE Cell ☐ Pond ☐ Pad ☐

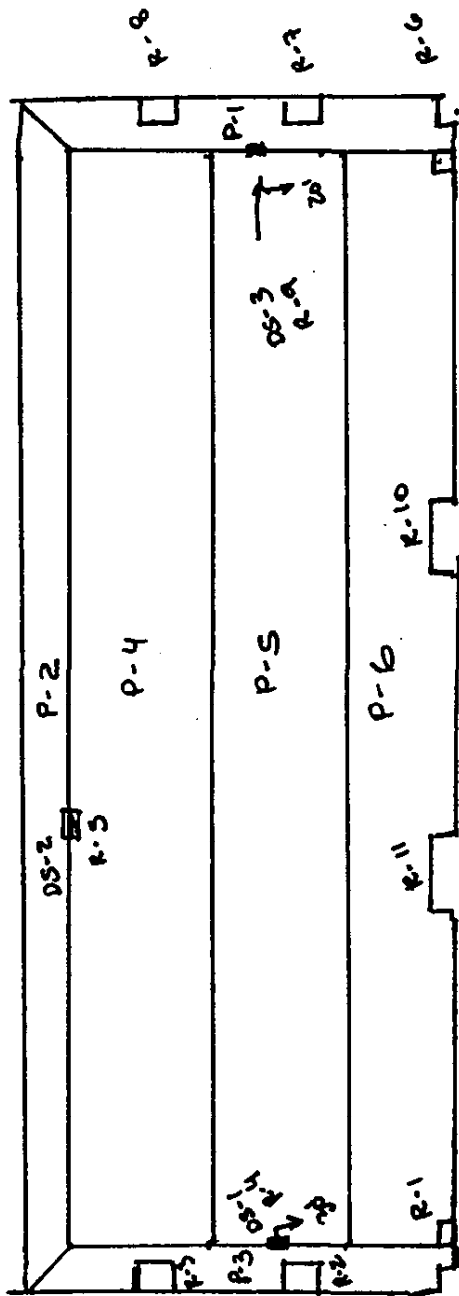
Job Description: Secondary Primary ☒ Secondary ☐

Reported By: Other Secondary Containment Minimum Shear Test Minimum 120 PPI

Peel Test Extrusion Minimum 78 PPI
Peel Test Fusion Minimum 78 PPI

Weld Date	Time am pm	Operator Name/ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Amb Temp		Coupon 1 A B	Coupon 2 A B	Coupon 3 A B	Coupon 4 A B	Coupon 5 A B	Test Results
11-7-03	8 :	FRANCISCO BAILON	74-35		450	400	65	Peel	116	138	122	120	115	
	Shear							248	240	244	240	228		
11-7-03	: 1	FRANCISCO BAILON	74-35		450	400	70	Peel	148	135	185	148	158	
	Shear							226	225	222	225	222		
11-8-03	7 :	FRANCISCO BAILON	74-35		450	450	58	Peel	168	163	157	165	180	
	Shear							255	240	241	245	261		
11-8-03	7 :	ARNULFO MARTINEZ	74-08		450	450	58	Peel	141	147	145	174	173	
	Shear							256	243	245	255	250		
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QUALITY CONTROLE DOCUMENTS
Preweld Test, Destructive Sample Test, Non-
Destructive Test



RECORD DRAWING
N.T.S.

RECORD DRAWING

4. Defects and Repairs

- 4.1 The geomembrane shall be examined for defects, holes, blisters, undispersed raw materials, and any sign of contamination by foreign matter. The geomembrane surface shall be clean at the time of examination. Each suspect location shall be repaired and non-destructively tested. Geomembrane shall not be covered at locations that have not been repaired.
- 4.2 Damaged geomembrane shall be removed and replaced with acceptable geomembrane if damage cannot be satisfactorily repaired.
- 4.3 Any portion of the geomembrane exhibiting a flaw or failing a destructive or non-destructive test shall be repaired. Procedures available include:
 - 4.3.1 Patching used to repair large holes (over 3/8" diameter) and tears (over 2 " long), and contamination by foreign matter.
 - 4.3.2 Abrading and re-welding: used to repair small seam sections (less than 12 " long).
 - 4.3.3 Spot welding: used to repair small tears (less than 2" long), pinholes, or other minor, localized flaws.
 - 4.3.4 Heat tacking and extrusion welding the outer flap on wedge seams.
 - 4.3.5 Capping used to repair large lengths of failed seams.
 - 4.3.5 Removing the unsatisfactory material or seam and replacing with new material.
- 4.4 Patches or caps shall extend beyond the edge of the defect, and all corners of material to be patched and these shall be rounded to a radius".
- 4.5 Repairs shall be non-destructively tested using methods specified in this section. Repair parameters shall be documented on the appropriate form.

Geomembrane Acceptance

Owner will accept the geomembrane installation when the installation is complete and verification of the adequacy of all field seams and repairs, including associated testing, is complete. Acceptance can be done as lining progresses or when the impoundment is completed.

Material and Test Maximum Acceptable Pressure and Pressure Loss

HDPE GEOMEMBRANE

<u>THICKNESS</u>	<u>MAX. PRESSURE</u>	<u>ALLOWABLE DROP</u>
20 mil	20 psi	5 psi
30 mil	25 psi	5 psi
40 mil	30 psi	4 psi
60 mil	30 psi	4 psi
80 mil	30 psi	4 psi
100 mil	30 psi	4 psi

LLDPE GEOMEMBRANE

<u>THICKNESS</u>	<u>MAX. PRESSURE</u>	<u>ALLOWABLE DROP</u>
20 mil	20 psi	5 psi
30 mil	25 psi	5 psi
40 mil	30 psi	4 psi
60 mil	30 psi	4 psi
80 mil	30 psi	4 psi
100 mil	30 psi	4 psi

3. Destructive Testing

3.1 Destructive Test Sampling shall conform to the following requirements:

- 3.1.1 As the welding of the geomembrane progresses, test samples shall be cut from the finished liner. The owner's representative or Comanco shall determine the location of the destructive samples, with no less than one sample taken for every 500 feet of seam. For larger projects destructive sample frequency may be increased as determined by project specification and/or at the discretion of the owner or engineer based on consistently passing test results. When reasonable, destructive samples should be taken at the beginning or end of a seam. This is to minimize seam footage in the finished lined area.
- 3.1.2 The destructive sample shall be a minimum of 12" wide by 36" long with the seam centered lengthwise. The sample shall be cut into three equal parts for distribution to Comanco for field testing, the CQA laboratory for testing (if required), and the owner for archiving. Field destructive test results shall be recorded on the appropriate form.
- 3.1.3 Cut samples at locations designated by the CQA consultant. Prior to the geomembrane being covered by the next layer of geosynthetics, required tests shall have passing results.
- 3.1.4 Repair all holes in the geomembrane resulting from destructive samples. The continuity of the repair shall be non-destructively tested.
- 3.1.5 Both destructive and trial weld samples shall be labeled with the relevant information.
- 3.1.6 When required, laboratory testing (performed by the CQA laboratory): Samples shall be tested in peel and shear (ASTM D4437).
- 3.1.7 All tests shall exhibit a film tearing bond type of separation. At least five coupons shall be tested by each test method. Four of five coupons shall meet the minimum requirements. For double wedge seam samples, both welds shall be tested in peel.
- 3.1.8 Failing samples shall be bounded by two locations where samples have passed destructive tests. For reconstructed seams exceeding 150 feet, a sample taken from within the reconstructed seam shall also pass destructive testing.

- The failed seam area can be left in place and a "cap strip" of liner extrusion welded over the top of the failed seam area.
- The failed area of the seam may be removed, and the entire panel shifted over to the proper overlap then a new weld constructed.
- Heat tacking and extrusion welding the outer flap on wedge seams.

Field Quality Assurance

Testing Requirements

1. Conformance Testing (By CQA Consultant)

- 1.1 When conformance testing of the geomembrane material is required per specification, and the samples have not been taken in the plant, samples shall be obtained in the field at a frequency defined in the project specifications. The CQA Consultant shall obtain samples and forward to the laboratory, care shall be taken not to damage the geomembrane during sampling.

2. Non-Destructive Testing

- 2.1 Non-destructively test all field seams over their full length using vacuum box testing, air pressure testing for fusion (wedge) welded seams only, or spark testing. Generally non-destructive testing is carried out as the seaming progresses. Non destructive test results shall be documented on the appropriate form.
- 2.2 Vacuum box testing shall conform to the following requirements:
- 2.2.1 The equipment shall include vacuum box assemblies consisting of the following: a rigid housing, a transparent viewing window, a soft neoprene gasket attached to the bottom, a port hole or valve assembly, a vacuum gauge, a vacuum device equipped with pressure control, and a soapy solution and an applicator.
- 2.2.2 Testing shall conform to the following procedure: Brush soapy solution on geomembrane seam. Place vacuum box over the wetted seam area. Ensure that a leak-tight seal is created. Apply a vacuum of approximately 5 psi. Examine the geomembrane through the viewing window for the presence of soap bubbles in the seam area. All seam areas where soap bubbles show the presence of a leak shall be marked and repaired as described in this section.
- 2.3 Air pressure testing for fusion (split wedge) welded seam with an enclosed space, shall conform to the following requirements:
- 2.3.1 The equipment shall consist of the following: an air pump (manual or motor driven) equipped with pressure gauge capable of generating and sustaining pressure over 35 psi, a rubber hose with fittings and connections, a sharp hollow needle, or other approved pressure feed device, and a pressure gauge.
- 2.3.2 Testing shall conform to the following procedure: Seal both ends of the seam to be tested. Insert needle or other approved pressure-feed device into the channel created by the double-wedge weld. Energize the air pump to a minimum pressure as indicated below, close the valve, allow pressure to stabilize and sustain the pressure for at least five minutes. If pressure loss exceeds the allowable drop or does not stabilize, locate faulty area and repair as described in this section. Puncture opposite end of the seam to release air. If blockage is present, locate and test seam on both sides of blockage. Remove needle or other approved pressure-feed device and seal penetration holes by extrusion welding as necessary.

10.1 Extrusion Welding:

- 10.1.1 Adjacent panels shall be tack bonded together using procedures that do not damage the geomembrane, and are not detrimental to final seaming. Welding apparatus shall be free of heat-degraded extrudate before welding. The geomembrane surface shall be abraded with a maximum of 1/4 inch beyond the weld bead area, using a disc grinder, or equivalent.
- The top edges of geomembrane 60 mil or greater shall be beveled 45° using a hand held grinder. Grinding depth shall not exceed ten percent of the liner thickness. The ends of all seams, which are more than five minutes old, shall be ground when restarting the weld.
- 10.1.2 Extrusion welding entails placing a hot extrudate of the same material as the sheet on top of the preheated lap of two adjoining sheets while simultaneously applying pressure, and utilizes a welding rod made from the same type of resin as the membrane. The welding rod is melted inside the extrusion welding machine to form the hot extrudate which is placed on top of the preheated lap of two adjoining sheets. Preheating of the sheet in the weld area is performed by the extrusion welding machine.
- 10.1.3 The Teflon shoe determines the profile of the molten extrudate. The temperature controllers are set to appropriate temperatures and the machines are allowed to heat up to the set temperature.
- 10.1.4 When the seam area is prepared, the welding machine is positioned so the nozzle and the shoe are flat on the seam. As the machine is moved forward, care is taken to assure that the point of the preheat nozzle is centered on the edge of the top sheet and is as close to the sheet as possible.
- 10.1.5 When the welding machine is operating as required a trial seam is made on strips of lining material and then tested, on site, per details in the specifications. The tests on the trial seam must pass before welding on the membrane.
- 10.1.6 As the welding progresses, the welding operator takes care to assure correct machine speed, temperature, and alignment.
- 10.1.7 The primary method or "production" welding will utilize wedge welding; extrusion welding will be used for repairs and detailing or as needed.

11. Seam Inspection and Repair

- 11.1 After welding, a close visual inspection of the seam is made. The inspection is to include weld alignment. For extrusion welding, the weld thickness and profile is inspected.
- 11.2 Defective areas are marked and repaired; the repairs are inspected and approved. This inspection/repair process is carried out in a systematic manner as soon as possible to ensure that no defective area goes unrepaired.
- 11.3 The following procedures shall apply whenever a sample fails the destructive test:
- 11.3.1 The installer shall reconstruct the seam between the failed location and any passed test location.
- 11.3.2 The installer may retrace the welding to an intermediate location (at a minimum of ten feet from the location of the failed test) and take a sample for an additional destructive test. If this test passes, then the seam shall be reconstructed between the passing test location and the original failed test location. If the test fails, the process is repeated until a passing test location is identified.
- 11.3.3 One of the following methods may be utilized to reconstruct failed seam areas:
- The failed area of the seam may be removed and additional strip of liner added and welded into place.

impoundment, this prevents water from getting under the membrane. Other factors and site specific conditions such as owner requirements, prevailing winds, coordination between other required work and contractors, schedule, design changes, access, efficiency, available approved subgrade, and other on site and existing conditions may influence actual finished panel layout and sequencing. When in position, panels are checked for any physical damage caused either during manufacture or during installation.

- 8.2 Rolls of geomembrane material are unrolled using equipment with adequate load rating and reach, and specially designed lifting apparatus which is attached to the equipment. This enables the panels to be placed in position without heavy equipment running on the material. Panels are laid so the top sheet laps the bottom sheet.

9. Preparation for Seaming

- 9.1 The seam numbering system shall be compatible with panel coding system. Seam identification numbers and welding parameters shall be recorded on the appropriate form.
- 9.2 The surface of the geomembrane shall be cleaned to remove moisture, dust, dirt, debris, or other foreign material. Solvents or adhesives shall not be used.
- 9.3 Fishmouths or wrinkles at seam overlaps shall be cut to achieve a flat overlap. The cut fishmouths or wrinkles shall be welded where the overlap is more than three (3) inches. When there is less than three inches overlap, an oval or round patch extending a minimum of six inches beyond the cut in each direction shall be used.
- 9.4 The general ambient temperature range for seam welding is between 32 °F and 110°F. For temperatures below 32°F, the following procedures shall be utilized when it is determined that work can be continued safely.
- 9.4.1 When the weather is clear and sunny with gentle winds (10 mph or less) wedge welding can normally be performed at an ambient temperature below 32 °F (liner temperature is usually warmer than ambient due to the sun) without additional provisions other than adjusting the welding machine. Welding temperatures and machine speeds are adjusted to compensate for cloudy weather and higher winds.
- 9.4.2 For ambient temperatures below 32°F trial weld results should be used to determine if welding can continue. A new trial seam should be made for every ambient temperature drop at 10°F increments from the original trial seam made and tested for seam welding below 32°F.
- 9.4.3 When extremely cold site conditions do not allow for passing weld results, utilizing welding machine set temperatures and machine speed adjustments, some means of preheating the liner other than that provided by the welding machine may be needed. Types of preheating (space heaters, temporary shelters and combinations of the two) will be determined by the individual job conditions.
- 9.5 Trial Welds: Trial welds shall be performed on geomembrane samples to verify welding equipment operations and performance of seaming methods and conditions. At a minimum one trial weld, per welding apparatus, will be made prior to the start of work and one completed mid shift. Welds shall be made under the same surface and environmental conditions as the production welds (i.e., in contact with geomembrane subsurface and similar ambient temperature).
- 9.6 Trial Weld Testing: Samples shall be at least three feet long and one foot wide with the seam centered lengthwise. One inch wide test strips shall be cut from the trial weld. Each of the specimens shall be tested in the field for peel. A trial weld specimen shall pass when the results are achieved for peel tests as shown in the specifications (FTB). For double-wedge welding, both welds shall be individually tested and both shall be required to pass in peel. Trial weld results and welding parameters will be recorded on the appropriate form.

10. Welding Procedures

5. Subgrade Preparation

- 5.1 The subgrade is prepared by the owner or by the contractor according to the specifications. The surface must be smooth, with no rapid or abrupt changes of grade such as steps or settlement next to concrete structures. All slopes and surfaces must be compacted to ensure the integrity of the membrane. Any differential settlement or sliding of the side slopes could rupture the membrane.
- 5.2 The surface of the subgrade must contain no sharp rocks or other debris that could damage the membrane.
- 5.3 A visual inspection of the subgrade shall be performed to determine that it is suitable to be lined. Comanco's acceptance of the subgrade surface, after lining by panel, shall be recorded on the relevant form.

6. Anchoring

- 6.1 The membrane is anchored as shown on the plans and approved drawings.

7. Deployment

- 7.1 Geomembrane panels shall be unrolled using methods that will not damage, stretch, or crimp the Geomembrane. Ballast that will not damage the geomembrane shall be used to prevent uplift due to wind. Methods used shall minimize wrinkles.
- 7.2 Panels shall be oriented perpendicular to the line of the slope crest (i.e., down and not across slope). For slopes steeper than 10:1, cross seams parallel to the crest or toe will be located at least 5 feet from the crest or the toe of slope. When staggered (a minimum of 5' offset) cross seams on slopes are acceptable unless otherwise specified.
- 7.3 Each panel deployed shall be assigned a simple and logical identifying code consistent with the order of deployment. An identifier (either numeric or alpha-numeric) shall be given to each panel used for the installation. This identification number shall be related to a material manufacturer roll number, which identifies the resin type, batch number, date of manufacture, and other relevant material properties. Assigned panel numbers with their related manufacturers roll stock number shall be recorded on the appropriate form. No more panels shall be deployed in one day than can be welded during that same day.
- 7.4 Personnel walking on the geomembrane shall not wear types of shoes that could damage the geomembrane. Smoking shall not be permitted while working on the geomembrane.
- 7.5 Vehicular traffic on the geomembrane shall be minimized. Equipment shall not damage the geomembrane by handling, trafficking, leakage of hydrocarbons, or any other means.
- 7.6 Comanco may use low ground pressure devices such as ATV's and tractors to help facilitate deployment over other geosynthetic layers. Low ground pressure devices are machines with less than 7 psi per wheel when carrying a driver weighing approximately 150 lbs. The typical specification for equipment working directly over the geosynthetics placing cover material is 7 psi. Using low ground pressure machines also results in a safer work environment. Utilizing low ground pressure machines results in less exertion by field personnel thus reducing the potential for strain related injuries.
- 7.6 Sufficient material shall be provided to allow for geomembrane shrinkage and contraction and to minimize bridging. The Superintendent shall determine the amount of additional geomembrane required for compensation based on the weather conditions during installation. Subsequent cover material (when required), minimal effluent levels (for liquid effluents), and/or a permanent ballast system is necessary to prevent bridging and potential membrane wind damage over time.

8. Placement of Membrane Panels

- 8.1 Panel placement will be per the project specifications and will be installed and sequenced in a manner which will allow for safe handling, minimize field seaming, and minimize waste. The layout and sequence of the panel placement is generally determined by the direction of rain runoff. Generally, the installation is started at the upwind side and at the highest elevation so that any rainfall runs off to the lower part of the

Polyethylene

Construction Quality Control (CQC)

Quality Control Program

1. HDPE and LLDPE Geomembrane Construction Quality Control

- 1.1 Comanco Environmental installs HDPE (High Density Polyethylene) and LLDPE (Linear Low Density Polyethylene) geomembranes. Documentation is required showing that the installation meets the required specification.

2. Delivery, Storage and Handling

- 2.1 Equipment used for offloading and handling of materials shall have adequate load rating and reach to unload materials in a safe manner. Fabric straps or other approved apparatus are used for handling of material. Care shall be taken to prevent damage to the geosynthetic materials during offloading.
- 2.2 The storage area must be as close as practical to the work area to minimize on site handling. A storage area is required that is reasonably flat, dry, and well drained. The storage area surface shall be smooth, flat, and free of rocks or other objects that could cut or puncture or otherwise damage the liner. The unloading shall be performed by Comanco or by the customer, depending on the arrangements for a particular project. The storage area must be secure to prevent vandalism and thefts and must be such that rolls are not likely to be damaged by passing vehicles. Rolls of geomembrane do not need protection from normal weather conditions.

3. On-site Material Inspection

- 3.1 Rolls or packages of lining material shall be inspected on site. The material shall be inspected and compared with the project specification to assure that the correct material for the job has been received. The material shall also be inspected for damage that may occur during shipment or unloading. Identification labels on material rolls shall be inspected and roll numbers recorded. The roll number is unique and shall be used to identify the roll in QC testing and to determine which panels are cut from an individual roll.

4. Equipment

- A. **Welding Equipment:** The Geomembrane Contractor shall provide welding equipment equipped with gauges showing temperatures at the nozzle (extrusion welder) or at the wedge (wedge welder) or have the equipment capable of measuring the temperature of the nozzle (hot air). Equipment shall be maintained in adequate number to avoid delaying work, and shall be supplied by a power source capable of providing constant voltage under a combined-line load.
- B. **Coupon Cutter:** The Geomembrane Contractor shall provide a punch press for the on-site preparation of specimens for testing. The press shall be capable of cutting specimens in substantial accordance with ASTM D4437.
- C. **Field Tensiometer:** The Geomembrane Contractor shall provide a tensiometer for on-site shear and peel testing of geomembrane seams. The tensiometer shall be in good working order, built to ASTM specifications, and accompanied by evidence of calibration within one year. It shall be equipped with a load cell that measures the force in unit pounds exerted between the jaws and have a digital readout.
- D. **Vacuum Box:** The Geomembrane Contractor shall provide a vacuum box for on-site testing of geomembrane seams. The vacuum box shall have a transparent viewing window on top and a soft closed-cell neoprene gasket attached to the bottom. The housing shall be rigid and equipped with a valve and vacuum gauge. The equipment shall be capable of inducing and holding a vacuum of 5 psi.
- E. **Gauge and Air Pump:** An air pump capable of sustaining 35 psi, and a gauge with a read out of at least 35 psi.

Introduction

People	Comanco's team of managers, engineers, marketing/sales representatives, office support personnel, construction supervisors, and installation technicians provides its customers with a level of expertise and performance unequaled in the geosynthetics industry.
Installation	Comanco installs geosynthetic lining systems with its own forces. Crew sizes, equipment complements, and work schedules are customized to accommodate job site requirements. Our Corporate Office located in Tampa, FL and regional construction centers in Baton Rouge, LA; and Reno, NV, are staffed with experienced project managers and technical support personnel, and act as <i>mobilization points for crew superintendents, master seamers, liner technicians, equipment operators, and quality control technicians</i> . Comanco owns a large inventory of specialty equipment, including double wedge, hot air and extrusion welders, sewing machines, grinders, generators, tensiometers, vacuum test boxes, and spark testers. A full time Corporate Safety Manager, conducts and documents on-site safety meetings, in house and on site continuing hands on task training, provides a safe work environment for employees and ensures that Comanco complies with OSHA, MSHA, and other construction industry safety standards.
Quality Control	Comanco is committed to quality, service, and safety. Through continuous training and development, stringent construction quality control (CQC) procedures result in the highest quality field installation work.
Conclusion	Comanco Environmental Corporation offers quality geosynthetic products and a level of service unmatched in the lining industry. Our unique combination of resources offers our customer assurance that a Comanco lining system will meet or exceed the project's performance requirements.

Table of Contents

Introduction.....	3
Polyethylene – Construction Quality Control	4
Quality Control Program.....	4
1. HDPE and LLDPE Geomembrane Construction Quality Control	4
2. Delivery, Storage, and Handling.....	4
3. On-site Material Inspection.....	4
4. Liner Panel Identification and Layout	4
5. Equipment	4
6. Subgrade Preparation	5
7. Anchoring	5
8. Deployment	5
9. Placement of Membrane Panels	6
10. Preparation for Seaming.....	6
11. Welding Procedures	7
12. Seam Inspection and Repair	8
Field Quality Assurance – Testing Requirements	9
1. Conformance Testing (By CQA Consultant)	9
2. Non-Destructive Testing	9
3. Destructive Testing	10
4. Defects and Repairs	11
Geomembrane Acceptance	11
Geomembrane Welding & Installation.....	12

QUALITY CONTROL MANUAL

*For the Installation and Field Quality Control of
HDPE and LLDPE Geomembrane*

PREPARED FOR
GROUP CONTRACTORS, INC.
EXIDE TECHNOLOGIES CONTAINMENT BUILDING UPGRADE



**ENVIRONMENTAL
CORPORATION**



ENVIRONMENTAL CORPORATION

November 20, 2003

Mr. Todd Black
Providence Engineering and Environmental Group, LLC.

**RE: Geosynthetic Completion Report
Hazardous Waste Containment Building
Floor Upgrade
Exide Technologies, Baton Rouge Smelter
COMANCO Job #03-1210**

Dear Mr. Black,

Enclosed you will find the required completion documents for the above referenced project. Please review and if you have any questions or need any assistance, feel free to give me a call.

Respectfully yours,

COMANCO ENVIRONMENTAL CORPORATION

Stephen Naylor
Estimator/Assistant Project Manager

Enclosure

cc: Kirk Johnson
File

APPENDIX E

GEOSYNTHETIC MATERIALS DOCUMENTATION

SAMPLE COLLECTION

Exide Technologies, 2400 Brooklawn Drive, Baton Rouge, LA 70807

SAMPLE TRANSFER (Original must be retained with sample at all times)

		RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1	NAME:	<i>[Signature]</i>	11/4/03	<i>Felmin Pace</i>	11/4/03
	COMPANY:	<i>Exide</i>	11:00	<i>Pace</i>	11:00
2	NAME:	<i>[Signature]</i>	11/4/03	<i>[Signature]</i>	13:30
	COMPANY:		13:31		13:30
3	NAME:	<i>[Signature]</i>	11/4/03	<i>Deidra Romero</i>	11/4/03
	COMPANY:		11/4/03	<i>PACE-BR</i>	1430

**EASI**

Environmental Analytical Solutions, Inc.

Methodology

Job Number: 25769

Reference: Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020,
March 1979, Revised March 1983.

Parameter

Method

Lead

239.2

Laboratory Report

Sample Identification: 20187427 CB-05
Sample Date: November 3, 2003
Sample Time: 1715
Laboratory Number: 2576905
Matrix: Water

Parameters	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
Lead	0.064	mg/l	0.005	111103/0900	SR

Sample Identification: 20187428 CB-06
Sample Date: November 3, 2003
Sample Time: 1725
Laboratory Number: 2576906
Matrix: Water

Parameters	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
Lead	0.066	mg/l	0.005	111103/0900	SR

Sample Identification: 20187429 CB-07
Sample Date: November 3, 2003
Sample Time: 1729
Laboratory Number: 2576907
Matrix: Water

Parameters	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
Lead	1.90	mg/l	0.500	111103/0900	SR

Sample Identification: 20187430 CB-08
Sample Date: November 3, 2003
Sample Time: 1742
Laboratory Number: 2576908
Matrix: Water

Parameters	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
Lead	0.058	mg/l	0.005	111103/0900	SR

**EASI**

Environmental Analytical Solutions, Inc.

Laboratory Report

Sample Identification: 20187421 CB-01
Sample Date: November 3, 2003
Sample Time: 1650
Laboratory Number: 2576901
Matrix: Water

Parameters	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
Lead	0.720	mg/l	0.050	111103/0900	SR

Sample Identification: 20187424 CB-02
Sample Date: November 3, 2003
Sample Time: 1655
Laboratory Number: 2576902
Matrix: Water

Parameters	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
Lead	0.059	mg/l	0.005	111103/0900	SR

Sample Identification: 20187425 CB-03
Sample Date: November 3, 2003
Sample Time: 1659
Laboratory Number: 2576903
Matrix: Water

Parameters	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
Lead	1.48	mg/l	0.100	111103/0900	SR

Sample Identification: 20187426 CB-04
Sample Date: November 3, 2003
Sample Time: 1704
Laboratory Number: 2576904
Matrix: Water

Parameters	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
Lead	0.031	mg/l	0.005	111103/0900	SR



Pace Analytical Services, Inc.
1000 Riverbend Blvd., Suite F
St. Rose, LA 70087
Phone: 504.469.0333
Fax: 504.469.0555

November 12, 2003

Mr. Steve Krul
EXIDE CORPORATION
2400 Brooklawn Drive
Baton Rouge, LA 70807

RE: Lab Project Number: 2022833
Client Project ID: CONTAINMENT BLDG AREA 2

Dear Mr. Krul:

Enclosed are the analytical results for sample(s) received by the laboratory on November 4, 2003. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

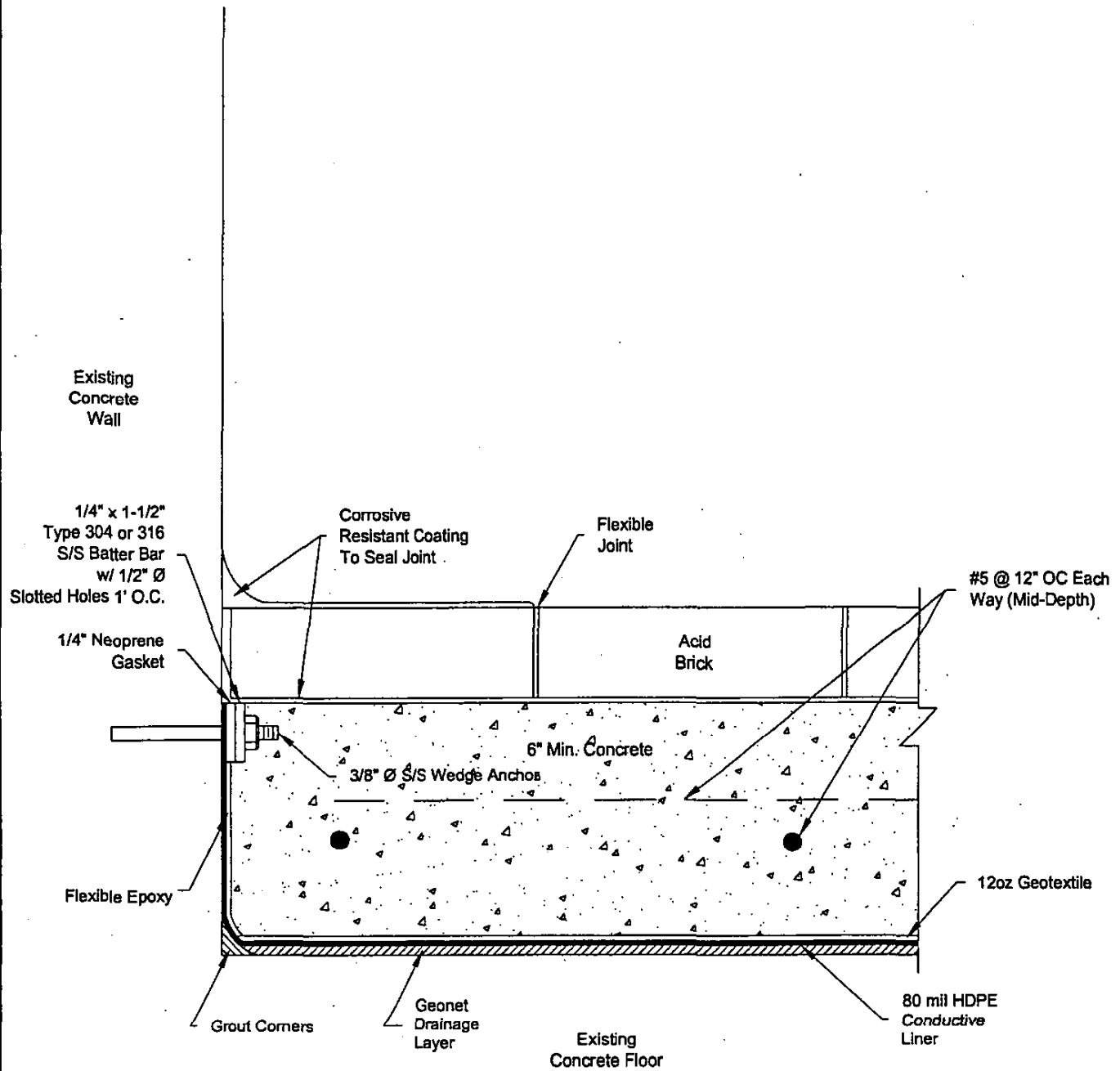
If you have any questions concerning this report please feel free to contact me.

Sincerely,

Cindy Olavesen
cindy.olavesen@pacelabs.com
(504) 305-3626
Project Manager

Enclosures

APPENDIX D
ANALYTICAL LABORATORY REPORT



Scale: 1/4" = 1"

"As-Built" Typical Detail

Containment Building Floor Upgrade
East Baton Rouge Parish

Exide Technologies
Baton Rouge, Louisiana



PROVIDENCE
ENGINEERING & ENVIRONMENTAL GROUP LLC
BATON ROUGE, LOUISIANA

Doc Code 028-008

Dwg. No.: 028-008-A007

Drawn: LMH

Checked:

Approved:

Date: 11/19/03

6

Figure



Legend

1.70 Approximate Elevation, FT (Relative)

Notes:

1. Elevations were collected by Providence Engineering and Group Contractors. These values are relative and do not represent georeferenced data points collected by a Professional Land Surveyor.



"As-Built"

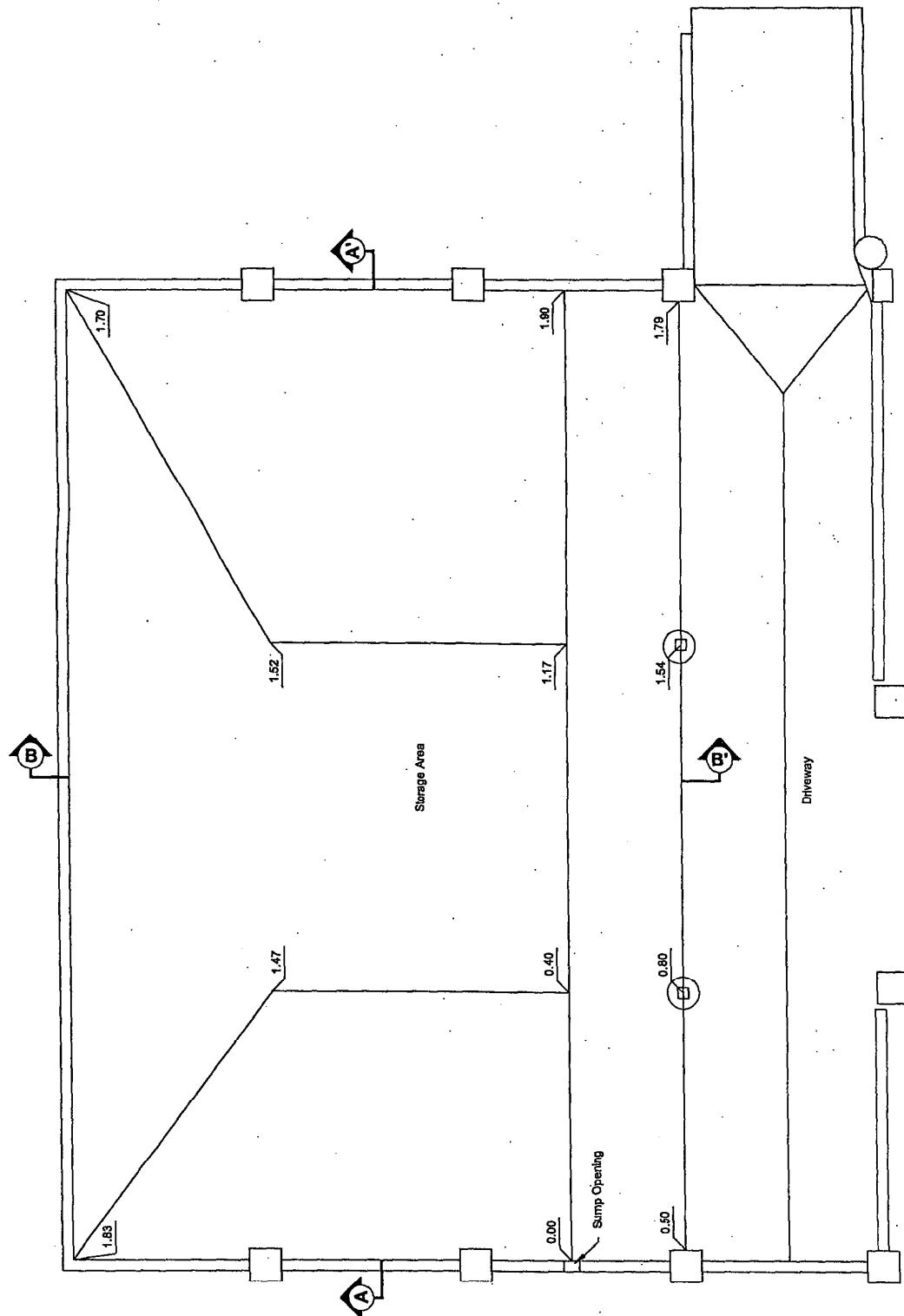
Existing Concrete Plan View

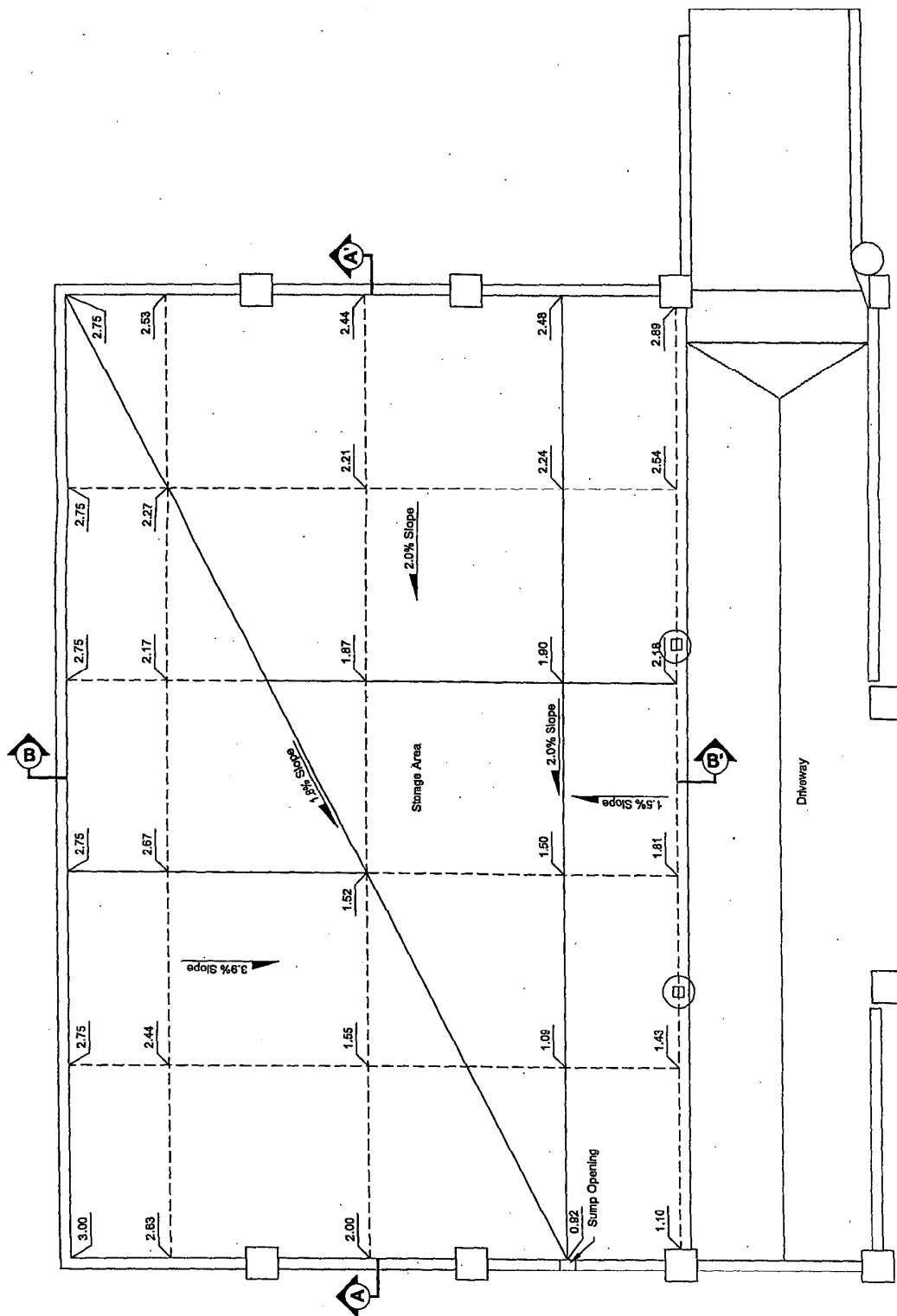
Containment Building Floor Upgrade
East Baton Rouge Parish

Exide Technologies
Baton Rouge, Louisiana

PROVIDENCE
ENGINEERING & ENVIRONMENTAL GROUP LLC
BATON ROUGE, LOUISIANA

Doc Code	028-008	Drawn:	LKH	Checked:		Approved:	1
Drawn by:	not over print						





Construction Joint	
Zip Strip Expansion Joint	
Approximate Elevation, FT	2.75

Notes:

1. New concrete had a minimum compressive strength of 4,000 psi.
2. Concrete was mixed and placed in accordance with ACI standards.
3. Concrete is reinforced with #5s rebar @ 12" o.c. in each direction located at mid depth.
4. All joints shall be covered with corrosive resistant tape.
5. Elevations were collected by Providence Engineering and Group Contractors. These values are relative and do not represent georeferenced data points collected by a Professional Land Surveyor.
6. Top of acid brick is nominally 2' $\frac{11}{16}$ " higher than the surface of the final concrete elevations depicted on this figure.



"As-Built"

Final Concrete Plan View

Containment Building Floor Upgrade East Baton Rouge Parish

Exide Technologies

Baton Rouge, Louisiana



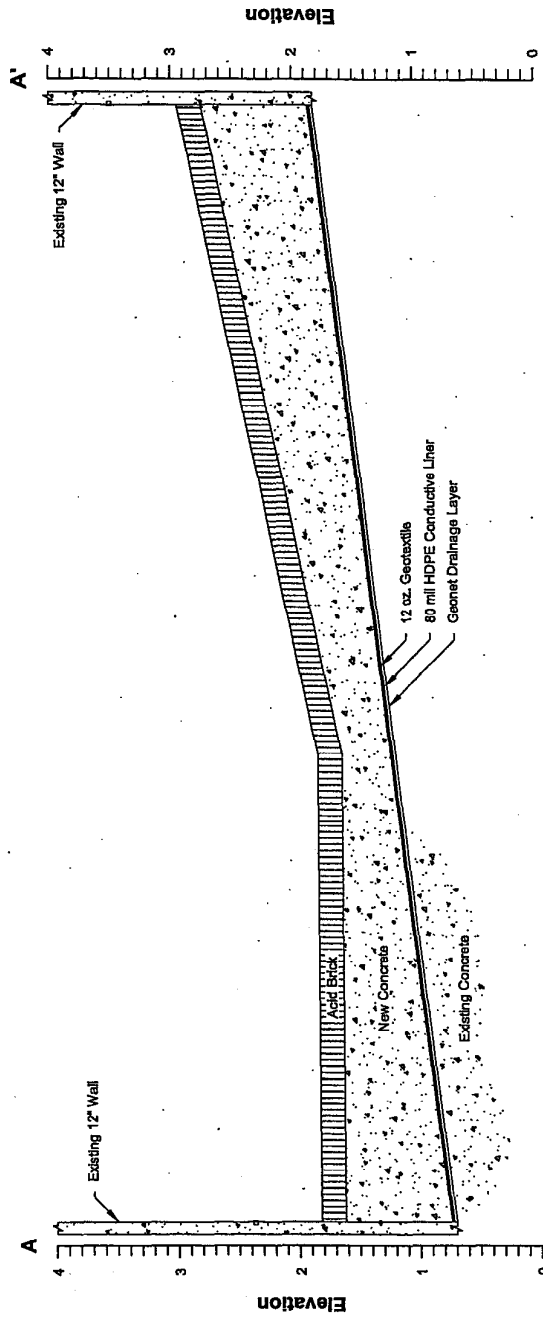
PROVIDENCE

ENGINEERING & ENVIRONMENTAL GROUP LLC

[illegible]

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1



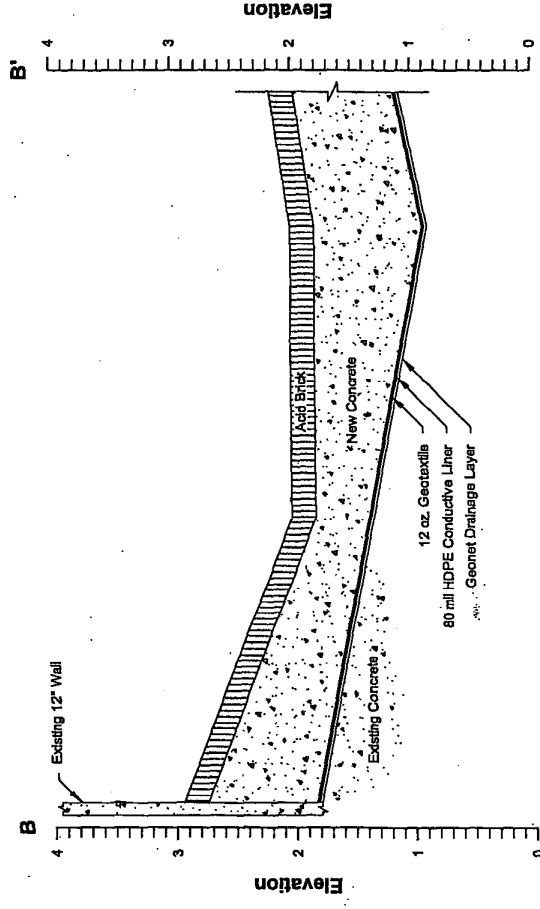
Section A-A'
Horizontal Scale: 1" = 10'
Vertical Scale: 1" = 1'

"As-Built"
Cross-Section A-A'
Containment Building Floor Upgrade
East Baton Rouge Parish


Exide Technologies
Baton Rouge, Louisiana

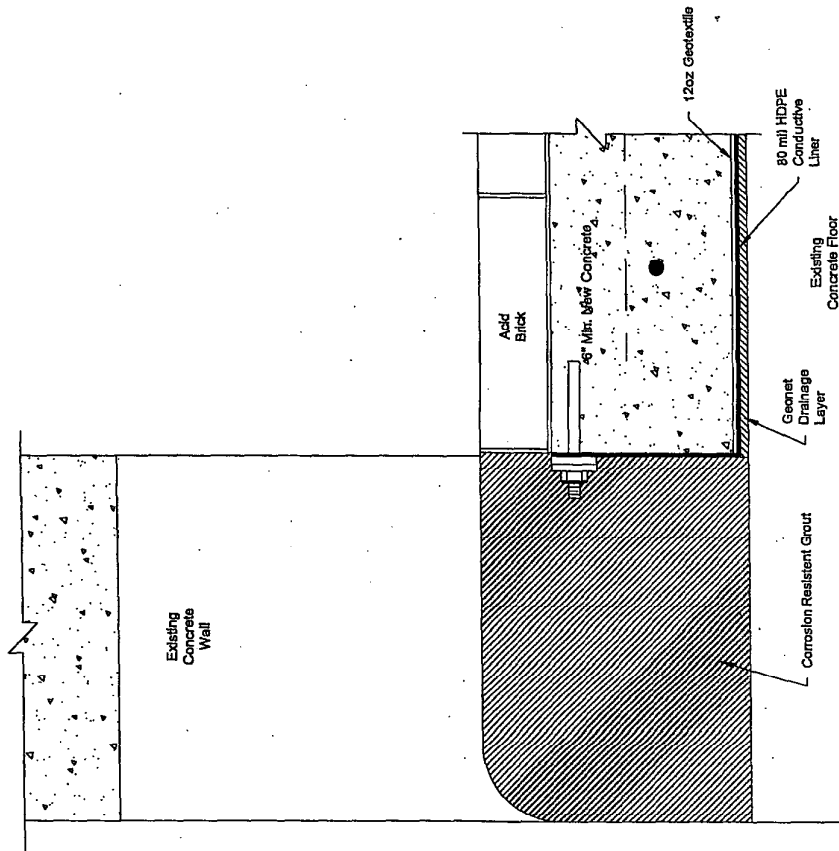


Doc Code	028-008	Drawn:	LWH	3
Proj. No.	028-008-9004	Checked:		Figure
Rev. No.		Approved:		
		Date:	11/19/03	



Section B-B'
 Horizontal Scale: 1" = 10'
 Vertical Scale: 1" = 1'

"As-Built"	
Cross-Section B-B'	
Containment Building Floor Upgrade East Baton Rouge Parish	
Exide Technologies Baton Rouge, Louisiana	
 PROVIDENCE ENGINEERING & ENVIRONMENTAL GROUP LLC BATON ROUGE, LOUISIANA	
Doc Code	028-008
Dwg. No.	028-008-B006
Drawn:	LMH
Checked:	
Approved:	
Date:	11/16/03
	4
	Figure



Scale: 1/4" = 1'

"As-Built"
Cross-Section of Sump Opening
 Containment Building Floor Upgrade
 East Baton Rouge Parish

Exide Technologies
 Baton Rouge, Louisiana



Doc Code	02B-008	Drawn	LMH
Checked		LMH	
Approved			

5

Dwg. No: 02B-008-001

Sump Concrete Pad
 @0.37 ft ± below Elevation
 of Existing Sump Opening

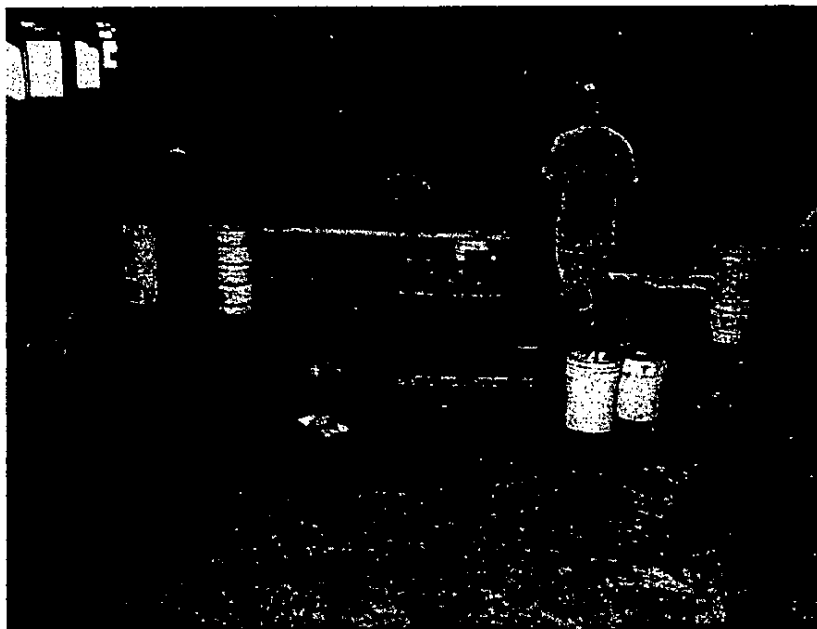
APPENDIX C
AS-BUILT DRAWINGS

Photograph 11



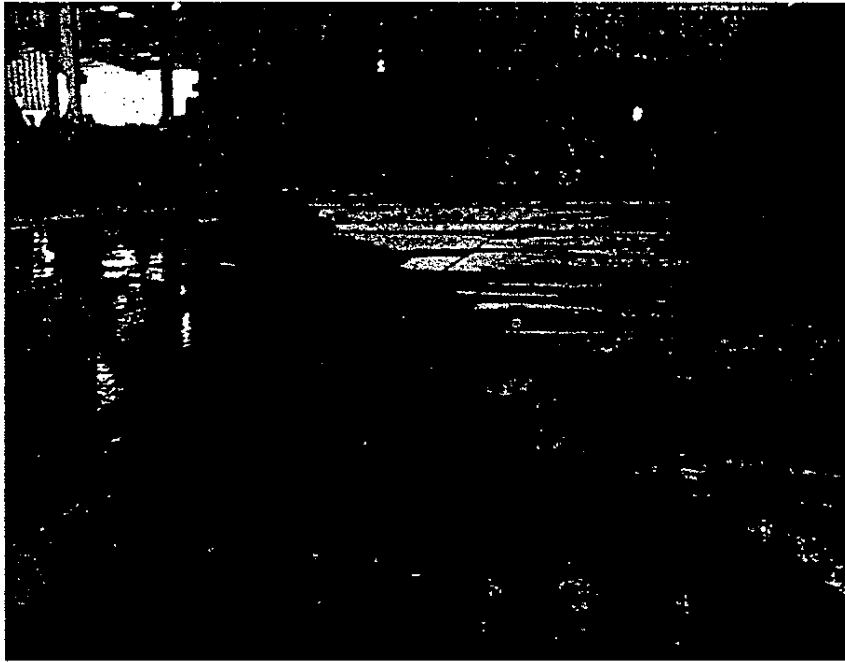
Description – View of acid brick installation.

Photograph 12



Description – View of acid brick installation.

Photograph 9



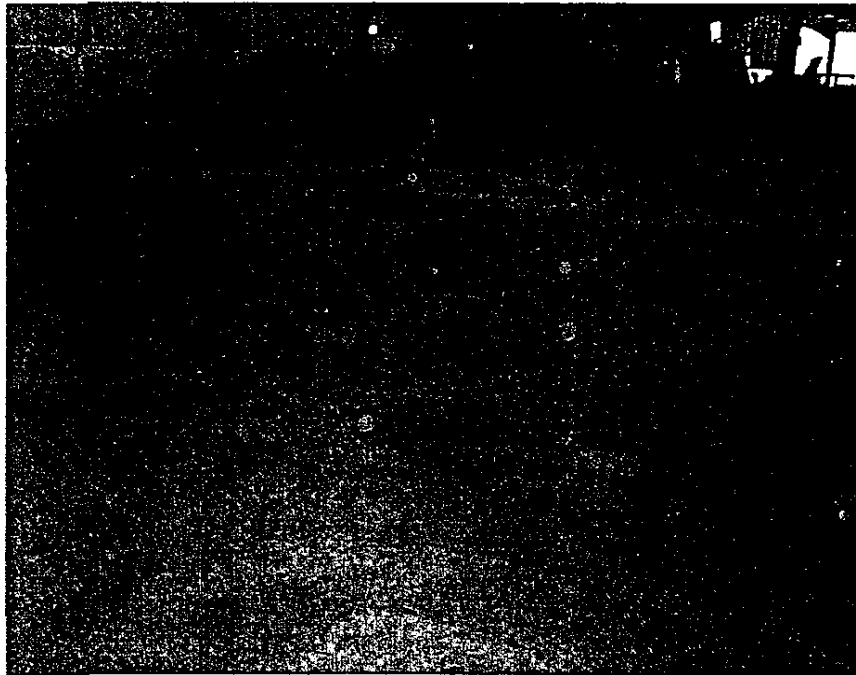
Description – View of drainage test in-progress. Note the water flowing as designed toward a middle swale and then to the sump on the far side of the photograph.

Photograph 10



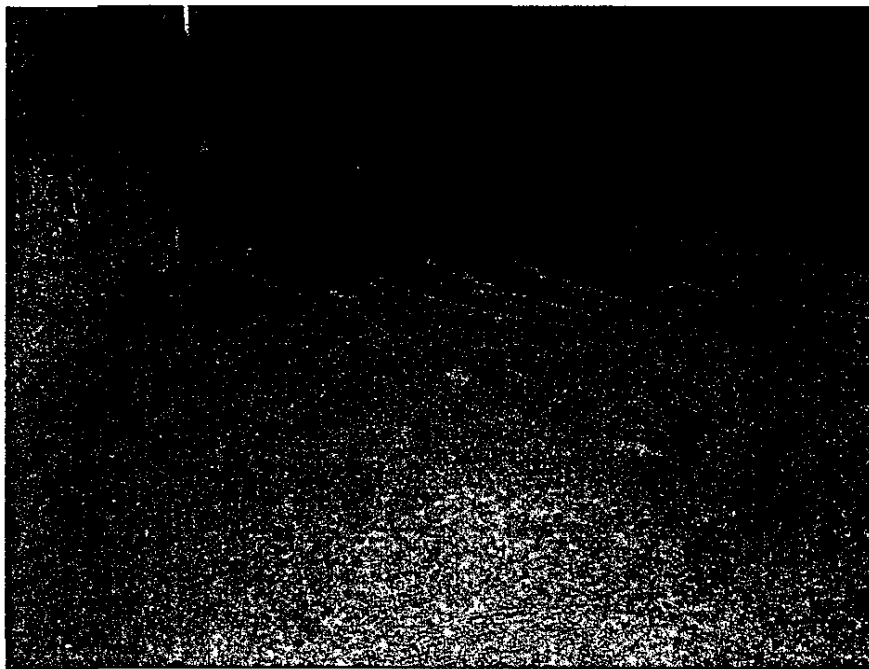
Description – View of the initial stages of acid brick installation.

Photograph 7



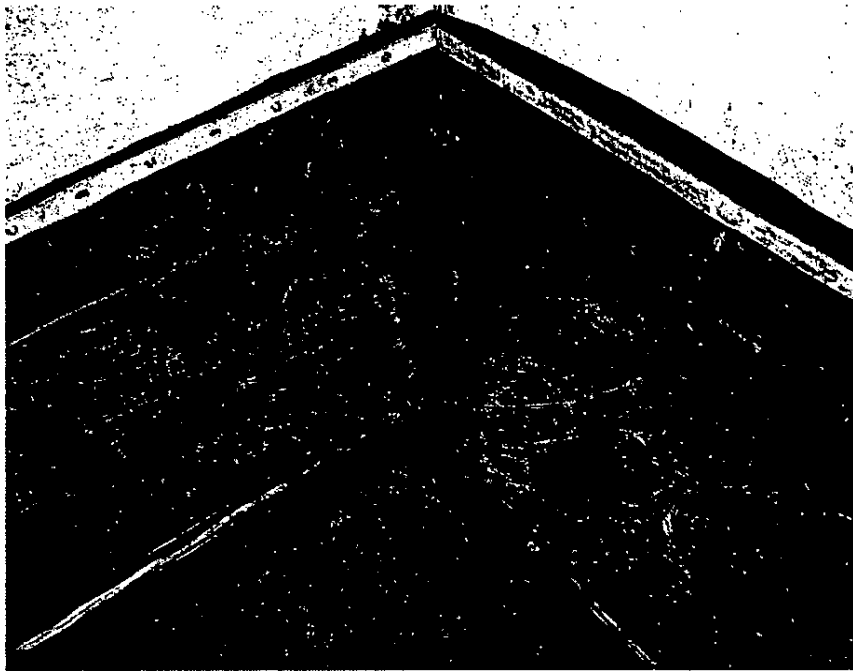
Description – View of finished concrete surface.

Photograph 8



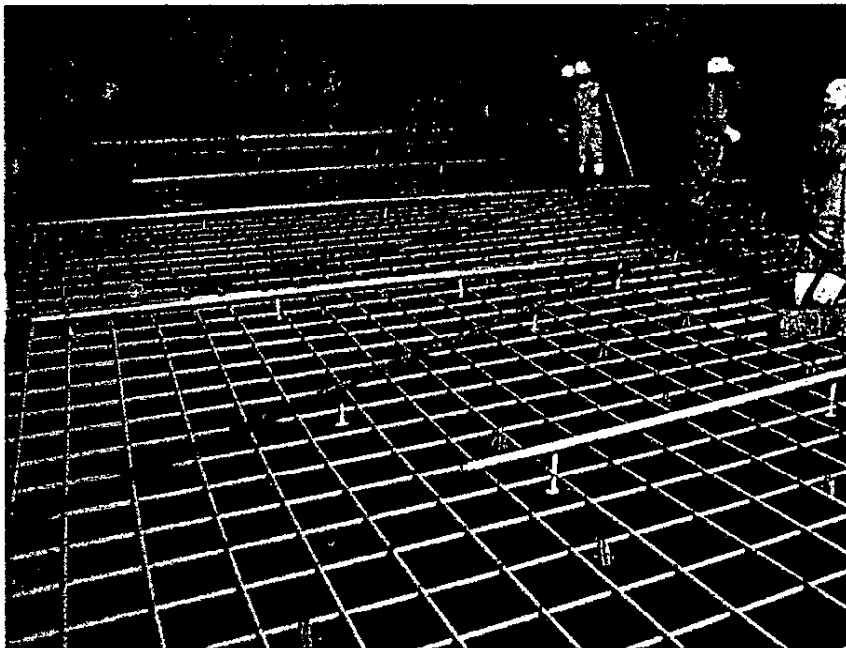
Description – View of drainage test, in-progress. Note the good flow of water from the corner of the building toward the designed drainage swale the goes to the sump.

Photograph 5



Description – View of 80-mil HDPE liner corner welds and anchor bolts/batter bars.

Photograph 6



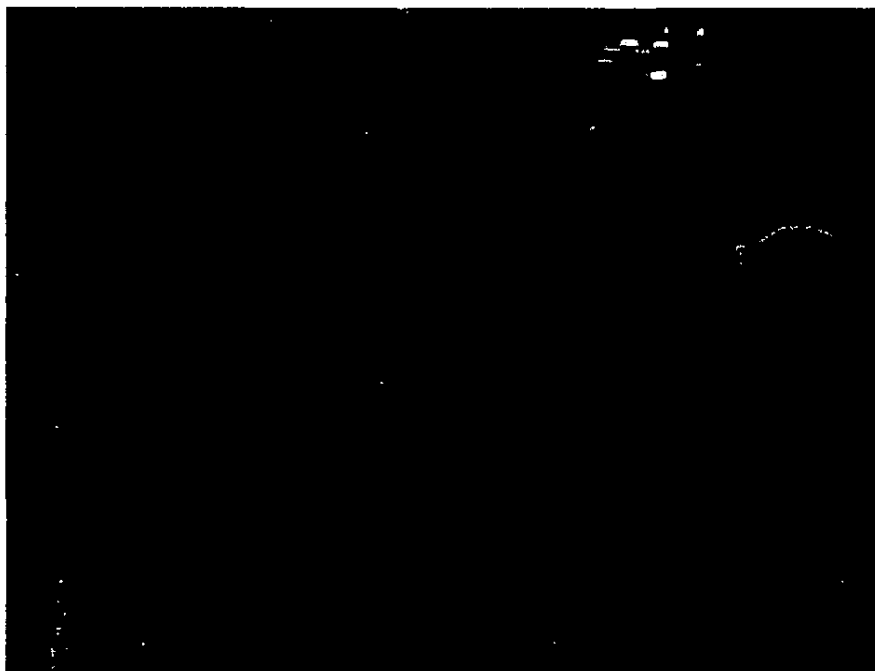
Description – View of concrete installation with epoxy-coated rebar visible.

Photograph 3



Description – View of 80-mil HDPE liner being installed above geonet drainage layer.

Photograph 4



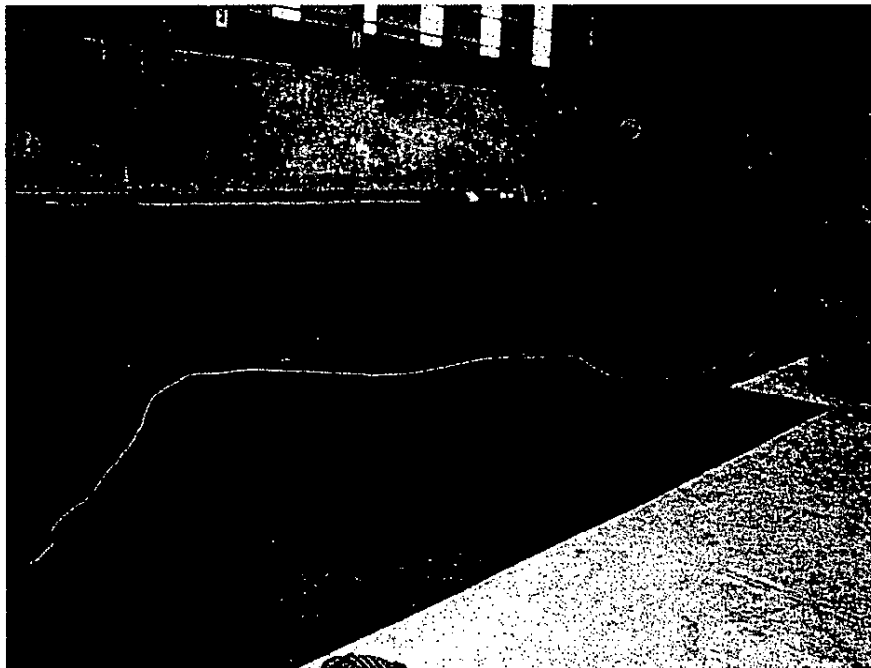
Description – View of 80-mil HDPE liner being installed.

Photograph 1



Description – View of the existing asphalt removal.

Photograph 2



Description – View of geonet drainage layer being installed.

Daily Report

(continued)

DATE: 11/20/3

PAGE: 2 of 2

Samples Collected/Analysis:

—

Comments:

10:00 ARRIVE ON SITE + CHECK IN w/ DUDE BROWN.

NOTE CONTINUING TO LAY BRICK $\approx 600 \text{ ft}^2$ LEFT TO LAY.

GROUP WORKING CONCRETE ON CHUTE THAT GOES INTO THE HAZE
WASTE STORAGE AREA.

12:00 Break / Lunch

12:35 Depart

Photo. I.D.	Grid I.D.	UTM Coord.	Photo I.D.	Grid I.D.	UTM Coord.
Photo of ACID Resistive GROUT TO Seeps through WALL					

Signed:

Randy G

Daily Report

DATE: 11/20/3

PAGE: 1 of 2

CLIENT NAME: EXIDE

PROJECT NO:

PROJECT DESCRIPTION: HAZ WST. STORAGE

Weather Conditions

Temperature: 72°

Humidity: 50%

Wind Speed and Direction: CALM

Cloud Cover/Precipitation:

Time

Work Start:

Work Stop:

Interruptions and Explanation:

Contractor Personnel and Equipment:

GROUP 15)

BRICKLAYERS (14)

Material Deliveries:

Work Completed:

CONTINUING TO LAY BRICK

GROUP CONTINUING TO WORK CHUTE F/ HAZ WST STORAGE
LAYING FLOOR USING TUPEHEM SILICATE CONCRETE.

PLACED ACID RESISTIVE GROUT TO DRAIN BOTH DRIVE WAY & HOLDING AREA
TO SUMPS

Daily Report

(continued)

DATE:

PAGE: 2 of 2

Samples Collected/Analysis:

Comments:

9:30 ARRIVE ON SITE & CHECK IN.

NOTE: GROUP FORMING UP ~~STU~~ CHUTE AREA TO WEST OF DRIVE WAY TO FOUR FLOOR.

STEVE KEUL w/ LDRG INSPECTOR LOOKING OVER SITE.

GROUP CONTINUING TO WORK ON CUTTING OUT SUMP ON STORAGE AREA SUMP.

12:00 BRICKLAYERS BREAK F/ LUNCH

1:00 Return & Resume

1:20 BEGAN CAULKING (Sealing) EXPANSION JOINTS IN BRICK.

Photo. I.D.	Grid I.D.	UTM Coord.	Photo I.D.	Grid I.D.	UTM Coord.
Photo of FORMS					
Photo of BRICK.					

Signed:

Daily Report

DATE: 11/19/13

PAGE: 1 of 2

CLIENT NAME:

PROJECT NO:

PROJECT DESCRIPTION:

Weather Conditions

Temperature:

Humidity:

Wind Speed and Direction:

Cloud Cover/Precipitation:

Time

Work Start:

Work Stop:

Interruptions and Explanation:

Contractor Personnel and Equipment:

BRICKLAYERS (14)

GROUP (5) INCLUDING DUDE

Material Deliveries:

Work Completed:

NOTE: IDEQ INSPECTOR ON SITE W/ STEVE KRUL TO LOOK OVER WORK COMPLETED AS WELL AS ON GOING WORK. (INSPECTOR: CHUCK?)

- FORMED UP FLOOR F / CHUTE
- BEGAN CAULKING SEAMS IN BRICK

Daily Report

(continued)

DATE:

PAGE: 2 of 2

Samples Collected/Analysis:

Comments:

9:30 ARRIVE ON SITE & CHECK IN w/ DUDE BROWN (GROUP).

RAIN LAST NIGHT & TODAY HALTED BRICK LAYERS

DUDE WORKING TO DRY FLOOR SO BRICK LAYERS CAN RETURN

- GROUP WORKING ON CUTTING OUT SOME WALL F/ STORAGE SO IT CAN

DRAIN TO SUMP.

Photo. I.D.	Grid I.D.	UTM Coord.	Photo I.D.	Grid I.D.	UTM Coord.
3x Photos of wet areas					

Signed:

Daily Report

DATE: 11/18/13

PAGE: 1 of 2

CLIENT NAME: EXIDE

PROJECT NO:

PROJECT DESCRIPTION: HAZ. WASTE STORAGE

Weather Conditions

Temperature: 70° RAINING.

Humidity: 100%

Wind Speed and Direction:

Cloud Cover/Precipitation: RAINING

Time

Work Start:

Work Stop:

Interruptions and Explanation:

Contractor Personnel and Equipment:

BRICKLAYERS Sent Home Due to RAIN.

Material Deliveries:

Work Completed:

GROUP WORKING TO DRY AREA & Keep RAIN F/ FLOOR. IT'S LEAKING F/ ROOF.

GROUP SAW CUTTING OUT SUMP ON STORAGE AREA SIDE

Daily Report

(continued)

DATE:

PAGE: 2 of 2

Samples Collected/Analysis:

Comments:

9:00 ARRIVE ON SITE & CHECK IN w/ DUDE BROWN (GROUP). HE INFORMED

me they were ahead of schedule

9:10 CHECK ON BRICK layers

Photo. I.D.	Grid I.D.	UTM Coord.	Photo I.D.	Grid I.D.	UTM Coord.
2x Photos of Brick being layed					

Signed:

Daily Report

DATE: 11/17/3

PAGE: 1 of 2

CLIENT NAME: EXIDE

PROJECT NO:

PROJECT DESCRIPTION: HAZ. WST - STORAGE

Weather Conditions

Temperature: 75°

Humidity: 100%

Wind Speed and Direction: CALM

Cloud Cover/Precipitation: OVERCAST

Time

Work Start:

Work Stop:

Interruptions and Explanation:

Contractor Personnel and Equipment:

12 BRICKLAYERS

1 GROUP

Material Deliveries:

Work Completed:

- Approx 4000 ft² Brick laid upon arrival F/ Beginning

Daily Report

(continued)

DATE:

PAGE: 2 of 2

Samples Collected/Analysis:

NONE

Comments:

9:30 ARRIVE @ SITE

9:40 PROCEED TO WORK AREA & SPEAK TO STEVE KRUL

NOTE: EXPANSION JOINTS RUNNING E-W ARE NO GREATER THAN 20' WIDE

NOTE: CONTINUING TO LAY BRICK.

2:35 Depart Site after checking out w/ DUDE.

Photo. I.D.	Grid I.D.	UTM Coord.	Photo I.D.	Grid I.D.	UTM Coord.
BRICK & Mortar WEST END of BUILDING					

Signed:

Daily Report

DATE: 11/13/3

PAGE: 1 of 2

CLIENT NAME: EXIDE

PROJECT NO:

PROJECT DESCRIPTION:

Weather Conditions

Temperature: 62

Humidity: 10%

Wind Speed and Direction: E/NORTH 5-10 MPH

Cloud Cover/Precipitation: CLOUDY

Time

Work Start:

Work Stop:

Interruptions and Explanation:

Contractor Personnel and Equipment:

12 Personnel

Dudek (Group)

Material Deliveries:

Work Completed:

APPROX 900 ft² Completed BRICKED

Daily Report

(continued)

DATE: 11/2/73

PAGE: 2 of 2

Samples Collected/Analysis:

Comments:

9:30 ARRIVE ON SITE & CHECK IN W/ STEVE KAUL.

9:40 OBSERVE SITE. NO ONE PRESENT, BUT BRICK HAD ALREADY BEGUN BEING LAYED.

11:00 LUNCH

12:00 Meet w/ DUDE BROWN (GROUP) & GET SHOT ELEVATIONS ON POURED CONCRETE.
CONTINUE LAYING BRICK.

2:55 Depart.

Photo I.D.	Grid I.D.	UTM Coord.	Photo I.D.	Grid I.D.	UTM Coord.
BRICK LAYS AROUND EDGE OF DRIVE WAY.					
↓ ↓					

Signed:

Daily Report

DATE: 11/12/3

PAGE: 1 of 2

CLIENT NAME: EXIDE

PROJECT NO:

PROJECT DESCRIPTION:

Weather Conditions

Temperature: 80°

Humidity: ≈ 60%

Wind Speed and Direction: CALM

Cloud Cover/Precipitation: OVERCAST

Time

Work Start:

Work Stop:

Interruptions and Explanation:

Contractor Personnel and Equipment:

BRICK LAYERS 8

DUDE BROWN

Material Deliveries:

Work Completed:

DISCUSS SETTING AN EXPANSION JOINT IN BRICK @ 21'8" @ A CONCRETE COLUMN INSTEAD OF THE 20' STIPULATED. IT WAS DETERMINED BY PROJ (CH) THAT THIS WOULD BE ACCEPTABLE. ALL REMAINING JOINTS WILL BE 318'

Daily Report

(continued)

DATE: 11-11-03

PAGE: 2 of 2

Samples Collected/Analysis:

Comments: 7:00 Arrive Site

7:30 - Performed water Flow Test - Steve, Duke - Pat
Flow Rate 25 gal per min. with Hose - Also 5 gal
Bucket - Along North wall for Puddling - everything
was fine.

8:30 - Group will seal expanded Cuts Today -
Steve, Pat - Duke Finalize Floor Inspect.

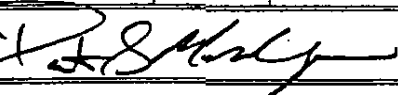
8:45 - Will try to send pics to DEQ this week.

Brick Layer's scheduled for Tues. 11-12-03

9:00 - Left site

Photo. I.D.	Grid I.D.	UTM Coord.	Photo I.D.	Grid I.D.	UTM Coord.
Perf water Test					
Finalize Floor					
seal Repairs					

Signed:



Daily Report

DATE: 11-11-03

PAGE: 1 of 2

CLIENT NAME: Exide

PROJECT NO:

PROJECT DESCRIPTION: Resurface Haz waste Storage Building

Weather Conditions

Temperature: 91

Humidity:

Wind Speed and Direction:

Cloud Cover/Precipitation: Sunny

Time

Work Start:

Work Stop:

Interruptions and Explanation:

Contractor Personnel and Equipment:

Sld Loader - 4-Group contractor
Rubber Tire Hc

Material Deliveries:

Work Completed:

water Drainage Flow Test complete

Daily Report

(continued)

DATE: 11-10-03

PAGE: 2 of 2

Samples Collected/Analysis:

Comments: 7:15 - Steel + ~~Steel~~ Skerds completed on Sun. 11-9-03

Observed Concrete Installation - Began At 4:00 AM.

9:00 Test Cylinders Prepared By Group.

9:30 - Steve K. (Exide) And Chuck H. (DEQ) Inspected concrete and steel installation.

11:00 - Start on soft cut for expansion.

11:30 concrete Pour complete. Surface Finishing continues

Discussed Water Flow Test with Steve, Todd - On

Scheduled 7:00 AM Tuesday 11-11-03

12:30 - soft cut and concrete Finishers completed.

1:30 - Contractor Begins clean up for water test.

2:00 - Left site

Photo. I.D.	Grid I.D.	UTM Coord.	Photo I.D.	Grid I.D.	UTM Coord.
Steel in Storage Area					
concrete Pour					
concrete finish					
soft cut p					

Signed:

[Signature]

Daily Report

DATE: 11-10-03

PAGE: 1 of 2

CLIENT NAME: Exide

PROJECT NO:

PROJECT DESCRIPTION: Resurface Haz waste storage Building

Weather Conditions

Temperature: 78

Humidity:

Wind Speed and Direction:

Cloud Cover/Precipitation: Cloudy

Time

Work Start:

Work Stop:

Interruptions and Explanation:

Contractor Personnel and Equipment:

Pump Truck Rubber Tire / 19-concrete Finishers on site
Skid Loader Hoz 2-concrete Pump truck op.

Material Deliveries:

Work Completed:

Steel and skid completed for concrete slab.
Concrete complete in storage area
Expansion cuts complete.

Daily Report

(continued)

DATE: 11-8-03

PAGE: 2 of 2

Samples Collected/Analysis:

Comments: 8:30 - Gathered + Tested Equipment Building Sample For
Peel + shear.

9:00 - Job walk with Eric

10:00 - Discussions with Group cont. or schedule To Lay
Steel + Pour Concrete - Concrete 4:00 PM Monday

11:30 Lunch

12:30 - Observed Vacuum Tests on Seam Welds

1:15 - Check H-DEQ And Steve K. Eric Performed Project
Inspection - NO COMMENTS

2:00 - Discussions with Group + Connected on wall repair
at Sump. - Liner complete

3:00 - Plastics Liner complete + Cleared

3:30. Installed Geo-Fabric - Hot weld seams complete

Photo. I.D.	Grid I.D.	UTM Coord.	Photo I.D.	Grid I.D.	UTM Coord.
3-Repairs from Destruct Samples					
Sump Repair					
VACUUM TEST					
Sump wall					

Signed:

[Signature]

Daily Report

DATE: 11-8-03

PAGE: 1 of 2

CLIENT NAME: Exide

PROJECT NO:

PROJECT DESCRIPTION: Resurface Haz Waste Storage Building.

Weather Conditions

Temperature: 75

Humidity:

Wind Speed and Direction:

Cloud Cover/Precipitation: Partly cloudy.

Time

Work Start:

Work Stop:

Interruptions and Explanation:

Contractor Personnel and Equipment:

Skid Loader

Rubber Tire Back-Hoe

Material Deliveries:

Work Completed:

- Liner Completed -

Geo textile Fabric Installed

Daily Report

(continued)

DATE: 11-7-03

PAGE: 2 of 2

Samples Collected/Analysis:

Comments: 7:15 - Arrive At site - Panels Bonded in Place

7:45. Start up Equipment Test with Command 40

8:20. Conducted Peel + Shear Test For start up. collected Test Results

8:35 - Seal Welding with extension welder Starts.

9:30 - Gathered pics of Sump Repairs. Per - Exide PAT Roy Eng.

9:45. Discussion with Prod. - Group. Agree to use Plastic Base Compound For soft cut expansion Joints.

10:15 - Group Informed Exide of Break Test on 24 Hour Result. 5748 lbs in 24 hrs.

2:00. Gathered Peel + Shear Equipment Test Results - 2nd of Day.

4:00 - Prepared 3 Destruct Sample Tests Peel + Shear - Part.

5:45 Left site

Photo. I.D.	Grid I.D.	UTM Coord.	Photo I.D.	Grid I.D.	UTM Coord.
Plastic in Place					
Peel + Shear Test Samples					
Sump Repairs Eng - Pat Roy					
Seal Weld's					

Signed:

Daily Report

DATE: 11-7-03

PAGE: 1 of 2

CLIENT NAME: Exide

PROJECT NO:

PROJECT DESCRIPTION: Resurface Haz Waste Storage Unit.

Weather Conditions

Temperature: 73

Humidity:

Wind Speed and Direction:

Cloud Cover/Precipitation: Cloudy

Time

Work Start:

Work Stop:

Interruptions and Explanation:

Contractor Personnel and Equipment:

Rubber Tire Back Hoe

Skid loader Man Lift

Material Deliveries:

Work Completed:

Plastic Liner In Place - still need welded.

Daily Report

(continued)

DATE: 11-6-03

PAGE: 2 of 2

Samples Collected/Analysis:

Comments: 7:15 - Arrive At site

9:00 - Discussion with Exide on Final Geo-Net Installation and Commandco on Liner Placement

9:30 - Discussed Floor Repairs with Steve Exide + Dade Group Cont.

9:30 - Floor Section SW Area Leveled + Cleared By Group.

10:30 - Todd B + Randy G. Site Inspection.

11:00 - Gathered Material Samples For Report - Liner Geo-Net

1:15 - Commandco Tentative schedule To complete Friday

3:00 - Expansion Joints were Removed By Contractor - Exide +

Pass. agree To use Wet Cut For Expansion

4:00 Liner Cut + moved to Floor. 5:30 - Commandco suggest - changing Exide

Photo. I.D.	Grid I.D.	UTM Coord.	Photo I.D.	Grid I.D.	UTM Coord.
Final Ramp					
To Be Floor Sect. Repaired					
Geo-Net Inst.					

Signed:

[Signature]

Daily Report

DATE: 11-6-03

PAGE: 1 of 2

CLIENT NAME: Exide

PROJECT NO:

PROJECT DESCRIPTION: Resurface Haz Waste Storage Building

Weather Conditions

Temperature: - 84

Humidity:

Wind Speed and Direction:

Cloud Cover/Precipitation: Sunny

Time

Work Start:

Work Stop:

Interruptions and Explanation:

Contractor Personnel and Equipment:

Skid Loader

Rubber Tire Back Hoe

Material Deliveries:

Work Completed:

Concrete Ramp Floor

Forms Removed

Gro NET Installed.

Daily Report

DATE: 11/5/03

PAGE: 1 of 2

CLIENT NAME: Exide

PROJECT NO:

PROJECT DESCRIPTION: Re-surface Haz. Waste Building

Weather Conditions

Temperature: 84°

Humidity:

Wind Speed and Direction:

Cloud Cover/Precipitation: Mostly Sunny

Time

Work Start:

Work Stop:

Interruptions and Explanation:

Contractor Personnel and Equipment:

1 - Case Back-Hoe Group Pump Truck Northlake 1:00
1 - Front End Fork Loader

Material Deliveries:

Work Completed:

Completed Form For Ramp -
Installed Rebar Steel - on Floor - of Ramp
Poured Concrete Slab on Ramp

Daily Report

(continued)

DATE: 11/5/03

PAGE: 2 of 2

Samples Collected/Analysis:

Comments:

8:00 AM - Arrive at PROJ. meet with Todd-B

9:00 AM - Arrive at Exide - meet with Steve Kral

Discussing Minor changes in Elevations in N-W corner

10:00 AM - Spoke with Group on expectations on Project

Daily Schedule and when Planned to Make Concrete Pour

Approx. 2:00 pm

11:30 AM

Contractor - Steve - change in Design of Ramp - Fig. 9

12:30 pm

Called Todd for Clarification

1:30 Pump Truck Set up - 2:30 - First concrete Truck.

Dalsie - Mixing additives on site

5:45 Left site

Photo. I.D.	Grid I.D.	UTM Coord.	Photo I.D.	Grid I.D.	UTM Coord.
Ramp Construct					
Prior to Pour					
Anchor System					
For Plastic					

Signed:

[Signature]

Daily Report

(continued)

DATE:

PAGE: 2 of 2

Samples Collected/Analysis:

Comments:

9:00 ARRIVE ON SITE W/ TODD BLACK & CHECK IN W/ STEVE KEUL

9:10 LOOKOVER SITE & SPEAK W/ DUDE BROWN & KIRK JOHNSON W/ GROUP.

10:00 TODD DEPARTS & I WATCH SAFETY ORIENTATION.

10:25 FINISH ORIENTATION & MOVE TO SITE.

1:30 WHILE REMOVING ASPHALT IN THE SW CORNER OF BUILDING AN APPROX 20 X 8' AREA WAS FOUND TO HAVE LIMESTONE BEWETH THE ASPHALT INSTEAD OF CONCRETE. A CALL WAS PUT IN TO PROJ. AND IT WAS DETERMINED THAT L.S. WOULD BE COMPACTED & SMOOTHED AND CONCRETE WOULD BE POURED OVER IT.

2:30 CHECK 6' MIN CEMENT THICKNESS BY RUNNING STRING LINES DETERMINE HAVE AREAS 2 LESS THAN Req'd 6" THICKNESS. TODD BLACK WILL COME TO SITE TO INSPECT.

3:30 TODD ON SITE

Photo. I.D.	Grid I.D.	UTM Coord.	Photo I.D.	Grid I.D.	UTM Coord.
Backhoe Removing Asphalt.					
PIC of LIMESTONE UNDERLAYING ASPHALT.					

Signed:

Randy

KIRK Johnson
DUDE

Daily Report

DATE: 11/4/3

PAGE: 1 of 2

CLIENT NAME: EXIDE

PROJECT NO:

PROJECT DESCRIPTION: RESURFACE HAZ. WASTE STORAGE BUILDING

Weather Conditions

Temperature: $\approx 80^\circ$

Humidity:

Wind Speed and Direction: NORTH

Cloud Cover/Precipitation: MOSTLY SUNNY

Time

Work Start:

Work Stop:

Interruptions and Explanation:

Contractor Personnel and Equipment:

1X CASE BACKHOE;

1X BACKHOE w/ JACKHAMMER ATTACHMENT; 1X TRACKHOE

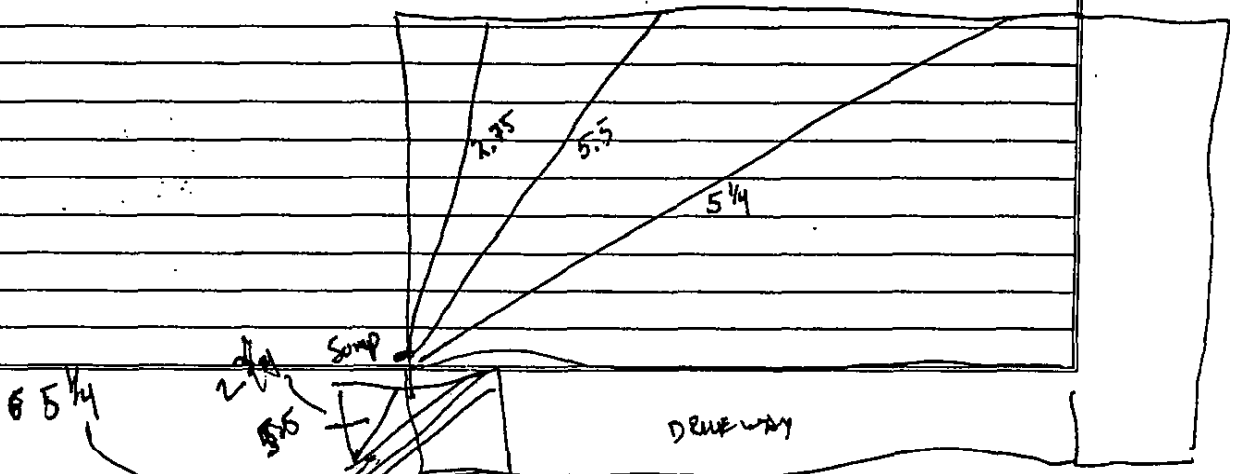
Material Deliveries:

Work Completed:

REMOVING ASPHALT F/ STORAGE AREA & BREAKING UP ASPHALT AROUND DRIVE WAY

NOTE: UNCOVERED AREA $\approx 20 \times 8'$ THAT HAD LIMESIDE INSTEAD OF CONCRETE UNDER ASPHALT (IN DRIVEWAY)

RUN STRIKE LINES TO CHECK 6" MIN CONCRETE THICKNESS TO BE POURED. DETERMINED HAS AREAS THAT WILL NOT MEET CRITERIA.



Daily Report

(continued)

DATE: 11-3-03

PAGE: 2 of 2

Samples Collected/Analysis:

Comments:

8:00 - Arrive Facility

9:00 - meet with Steve Kaul - Told Black.

9:30 - Job walk with Steve + Todd

10:15 - SAfty Training By Exide - Steve Kaul Inst.

11:00 - Group Contractor's - Discussion on 6" or 8" min.

Concrete across Contain Floor & Ramp.

12:00 LUNCH.

12:30 meeting with Back contractors, Group cont. + Exide
Steve, Pat Key. Discuss Sump Repairs - outside Prev. Scope.

2:30 Left site For office.

Photo. I.D.	Grid I.D.	UTM Coord.	Photo I.D.	Grid I.D.	UTM Coord.
No - Contain					

Signed:

Pat Key

Daily Report

DATE: 11-3-03

PAGE: 1 of 2

CLIENT NAME: Exide

PROJECT NO:

PROJECT DESCRIPTION: Resurface Haz waste storage Building

Weather Conditions

Temperature: Sunny - 93

Humidity:

Wind Speed and Direction:

Cloud Cover/Precipitation:

Time

Work Start:

Work Stop:

Interruptions and Explanation:

Contractor Personnel and Equipment:

1 - Rubber Tire Back Hoe

1 - Skid Loader

Material Deliveries:

Work Completed:

Removed waste and cleaned existing Asphalt.

APPENDIX A
DAILY REPORTS

- Expansion Joint Filler

Property	Test Method	Minimum Value	
		Caulking Grade	Pouring Grade
Cured Mortar Density	-	40-42 lbs/ft ³	92 lbs/ft ³
Tensile Strength (after 14 days @ 70°F)	ASTM C 307	300 psi	1,130 psi
Tensile Elongation (after 30 days @ 70°F)	ASTM D 638	50%	50%
Compressive Yield (after 28 days at 70°F)	ASTM C 306	700 psi	1,500 psi
Bond Strength (after 28 days @ 70°F)	ASTM C 321	250 psi	> than strength of concrete
Moisture Absorption	ASTM C 413	~ 1%	~ 1%
Minimum setting temperature	-		50°F

Notes: The above listed typical physical properties represent FLEXJOINT Joint Filler. The filler shall cover the expansion material - a closed cell foam rod (½" to 5/8" diameter).

Appendix G includes the manufacturers specifications for the brick and associated materials used for this project.

6.0 EVALUATION OF CONSTRUCTION AND CERTIFICATION

Based on the documentation provided herein and the oversight that was performed, the Hazardous Waste Containment Building floor, at a minimum, was upgraded in accordance with the approved hazardous waste permit modification. In accordance with the requirements of Title 33 of the Louisiana Administrative Code, Part V.513, certification of this document is required. This certification is in **Appendix H** and is certified by a Professional Engineer, licensed in the State of Louisiana and a representative of Exide.

- Corrosive Resistant Brick

Property	Test Method	Typical Value
Bulk Density	ASTM C 20	139-141 lbs/ft ³
Water Absorption	ASTM C 20	3.14-3.46 %
Solubility in Sulfuric Acid	ASTM C 2790	2.2-3.9 %
Apparent Porosity	ASTM C 20	7.42-8.06 %
Apparent Specific Gravity	ASTM C 20	2.54-2.55 grams/cc
Modulus of Rupture	ASTM C 67	1,900-3,560 psi
Compressive Strength	ASTM C 67	21,390-22,650 psi
Tensile Strength	ASTM C 1006	3,195-3,390 psi
Modulus of Elasticity	ASTM C 885	6.98-7.97x10 ⁶
Poisson's Ratio	-	0.125-0.193
Coefficient of Expansion	-	4-5.5 in/in°Fx10 ⁻⁶
Thermal Conductivity	ASTM C 236	7-9 BTU-in/hr-ft ² °F
K Factor	ASTM C 177	8 BTU/sq ft/in/hr

Note: The above listed typical physical properties represent Belden Red Shale Chemical Resistant Brick.

- Mortar

Property	Test Method	Minimum Value
Mortar Density Green Panel	-	105 lb/ft ³
Compressive Strength	ASTM C 579	6,000 psi
Flexural Strength	ASTM C 580	2,000 psi
Tensile Strength	ASTM C 307	900 psi
Bond Strength to wire cut brick faces	ASTM C 321	752 psi
Bond Strength to matte surface brick	ASTM C 321	580 psi
Maximum service temperature	-	350°F
Work Life	ASTM C 308	25-35 minutes
Initial set time	ASTM C 308	40-50 minutes
Absorption	ASTM C 413	0.17%

Note: The above listed typical physical properties represent FURALAC Green Panel and Special Mortar.

cubic yards. The thickness of the concrete is demonstrated by the difference between the elevations of the "Existing Concrete Plan View" and the "Top of Concrete Plan View" drawings included in **Appendix C**.

To test the strength of the concrete several concrete cylinders were made for testing of compressive strength in accordance with "Test Method for Comprehensive Strength of Cylindrical Concrete Specimens", method ASTM C 39. The plan was to test one cylinder at approximately 24 to 48 hours after the concrete pour and then to reserve the others in case additional curing time was necessary to obtain a test result that met the minimum 4,000 psi compressive strength requirement. However, the first cylinder of each series of cylinders tested above the minimum compressive strength requirements and the reserve cylinders were not necessary for testing. Results of the concrete compressive strength testing are included in **Appendix F**.

To test the drainage of the concrete surface, Providence Engineering conducted drainage test. Water was poured at an approximate flow rate of 25 gallons per minute on all surfaces of the concrete and observations were made to determine if any puddling occurred (defined as standing water greater than 0.25 inches or 0.021 feet). No puddling was observed. Photographs of the drainage test are included in **Appendix B**. Should, unexpectedly, localized water puddling occur at a later date on the finished containment building floor, Exide will use a squeegee to directed the puddle water to the sump.

5.4. Installation of Acid Brick

The acid brick was installed directly above the new concrete layer. The minimum design specifications for the installed brick and associated epoxy adhesive, mortar, and expansion joint filler is as follows:

- Epoxy Adhesive

Property	Test Method	Minimum Value
Compressive Strength	ASTM C 306	10,000 psi
Tensile Strength	ASTM C 307	2,500 psi
Flexural Strength	ASTM C 580	4,500 psi
Coefficient of Expansion	ASTM C 531	35×10^{-6} in/in/°F
Water Absorption	ASTM C 143	0.2%

Note: The above listed typical physical properties represent THIN SET adhesive.

placed in Exide's permitted solid waste landfill. Following the removal of the asphalt, a verification survey was conducted on the underlying concrete. Results of the survey are incorporated into the As-Built Drawings that are included in **Appendix C**.

5.2. Installation of Geosynthetics

Following the removal of the existing asphalt surface the remaining concrete was inspected and corrected to avoid surface undulations (mounds, pitting, etc.) that would not be ideal as a base for the geosynthetics that were to be installed directly on top of the concrete base. These geosynthetics consisted (from bottom to top) a geonet drainage layer, an 80-mil high density polyethylene (HDPE) liner, and a protective geotextile filter fabric.

Appendix E provides the geosynthetic construction quality assurance manual, specifications for each geosynthetic used, daily field reports from the geosynthetic installers and test data including pre-weld test seams for the 80-mil HDPE liner and destructive seam test results. All testing results were well within acceptable tolerances for this project.

The anchoring system of the 80-mil HDPE liner was improved to better protect the liner and the anchoring system from damage by daily operations, once the Containment Building is put back into service. The improvement consisted of installing the anchoring batter bar at an elevation that is the same as the new concrete surface. Above that level, the acid brick was placed and a layer of grout installed at the perimeter of the Containment Building walls along the edge of the acid brick. This extra grout is to seal against liquids from traveling between the wall and the floor. The previous design had the 80-mil HDPE anchoring system batter bars above the acid brick, which, based on the operation of the Containment Building, presented high probability of the batter bars being sheared off and therefore allowing the liner to be damaged. The As-Built Drawings are included in **Appendix C**.

5.3. Installation of New Concrete

Once the liner system was installed, a new concrete layer was installed. The design strength of the concrete was 4,000 pounds per square inch (psi) and the concrete was reinforced with Number 5, epoxy coated steel rebar spaced at 12 inches on center, in a grid pattern and the mid-depth point of the new concrete. The slope of the concrete was designed to drain water from the containment building floor toward the sump on the southwest corner of the containment building. During the forming of the concrete, only minor final surface elevation increases were required to insure that the concrete was maintained at a minimum thickness of 6 inches. This resulted in an increase in the estimated quantity of concrete by less than one percent, for a total concrete volume of approximately 152

3. Data on weather conditions including temperature, humidity, wind speed and direction, cloud cover, and precipitation.
4. Construction Contractor's equipment in use and materials delivered to the job site.
5. Description of work-in-progress including locations and type of work performed.
6. Summary of meetings held and attendees.
7. A description of materials used and references or results of testing and documentation.
8. Discussion of problems/deficiencies identified and corrective actions taken.
9. Identification/list of laboratory samples collected, marked, and delivered to laboratories or clear reference to the document containing such information, if samples were obtained.

Daily reports are presented in **Appendix A**.

4.2. Photographic Documentation

Photographic documentation of all phases of construction was collected during the project. Representative photographs taken during construction are provided in **Appendix B**.

4.3. Surveying

Providence Engineering personnel observed and verified surveying activities that were conducted by Group Contractors during the construction process. These surveys were used to develop As-Built Drawings that are included in **Appendix C**.

5.0 Construction Sequence

5.1. Removal of Materials and Asphalt Surface Course

The initial step of the construction effort was to remove all product and material. Following the removal of all stored materials, the containment building floor and walls were decontaminated and rinsate samples were collected and analyzed to confirm the success of the decontamination process. A copy of the analytical laboratory report for this sampling is included in **Appendix D**. Results of the sampling indicated that the building had been decontaminated to a point that it was non-hazardous. Therefore, the removed (and confirmed non-hazardous) asphalt was

2.5. Construction Contractor

Group Contractors was the primary contractor responsible for the construction of the Containment Building floor upgrades in accordance with all design criteria, plans, and specifications using the necessary construction procedures and techniques.

2.5.1. Geosynthetic Installers

Comanco Environmental Corporation. was the contractor responsible for the installation of the synthetic liner system.

2.5.2. Acid Brick

Stebbins Engineering and Manufacturing Company was the company responsible for the installation of the acid brick.

3.0 PERSONNEL QUALIFICATIONS

3.1. Construction Quality Assurance Officer

The construction Quality Assurance Officer is Mr. Todd Black, P.E. of Providence Engineering. Mr. Black is a licensed Registered Professional Engineer in the State of Louisiana and is experienced in the design and construction of waste disposal facilities.

3.2. Construction Quality Assurance Personnel

Construction Quality Assurance Inspectors consists of two qualified professionals, Mr. Patrick Mossbarger, and Mr. Randy Grice. Both Construction Quality Assurance Personnel are experienced in activities necessary to ensure all requirements and specifications relating to the Containment Building floor upgrade are strictly followed.

4.0 GENERAL CONSTRUCTION INSPECTION AND DOCUMENTATION

4.1. Daily Reports

A summary report was prepared daily by the onsite Quality Assurance Inspector for each day of onsite observation. The following information is contained in each report.

1. Date, project name, location, and report preparer's name.
2. Time work starts and ends each construction work day. Also, the duration and reason for work stoppages.

1.0 INTRODUCTION

Exide Technologies (Exide) owns and operates the Baton Rouge Smelter located in East Baton Rouge Parish in Baton Rouge, Louisiana. The Baton Rouge Smelter is an existing recycling facility, where spent lead batteries and lesser quantities of other lead-bearing materials are processed to recover their lead content and acids and plastics from the battery recycling process are recycled. As part of the recycling process Exide maintains a Hazardous Waste Containment Building (Containment Building). In accordance with a Hazardous Waste Permit Modification, Exide has upgraded the floor system of the Containment Building. This document provides discussion of the construction activities and provides certification by a Professional Engineer, licensed in the State of Louisiana.

Throughout the construction phase of this project Louisiana Department of Environmental Quality (LDEQ) made multiple site visits at key points in the construction process. At the end of each inspection Exide received positive feedback from LDEQ on the progress of the construction. Therefore, Exide believes that this certification document and the LDEQ inspections combine provide adequate verification of the construction effort.

2.0 RESPONSIBILITY AND AUTHORITY

2.1. Permitting Agency

The Louisiana Department of Environmental Quality (LDEQ) is responsible for reviewing the CQA document for the Containment Building floor upgrades.

2.2. Facility Owner/Operator

Exide is the owner and operator of the Containment Building.

2.3. Design Engineer

Providence Engineering and Environmental Group LLC (Providence Engineering) was responsible for providing personnel for the design of Containment Building floor upgrades.

2.4. Construction Quality Assurance Personnel

Providence Engineering was responsible for providing personnel to perform inspections, oversight, and documentation to ensure the Containment Building floor upgrades met or exceeded design specifications and regulatory requirements.

LIST OF APPENDICES

Appendix

- A Daily Reports
- B Photographic Documentation
- C As-Built Drawings
- D Analytical Laboratory Report
- E Geosynthetic Materials Documentation
- F Concrete Compression Testing Results
- G Acid Brick, Epoxy Adhesive, Mortar, and Expansion Joint Filler Specifications
- H Professional Engineer Certification

TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	RESPONSIBILITY AND AUTHORITY	1
2.1.	Permitting Agency	1
2.2.	Facility Owner/Operator	1
2.3.	Design Engineer	1
2.4.	Construction Quality Assurance Personnel	1
2.5.	Construction Contractor	2
2.5.1.	Geosynthetic Installers	2
2.5.2.	Acid Brick	2
3.0	PERSONNEL QUALIFICATIONS	2
3.1.	Construction Quality Assurance Officer	2
3.2.	Construction Quality Assurance Personnel	2
4.0	GENERAL CONSTRUCTION INSPECTION AND DOCUMENTATION	2
4.1.	Daily Reports	2
4.2.	Photographic Documentation	3
4.3.	Surveying	3
5.0	Construction Sequence	3
5.1.	Removal of Materials and Asphalt Surface Course	3
5.2.	Installation of Geosynthetics	4
5.3.	Installation of New Concrete	4
5.4.	Installation of Acid Brick	5
6.0	EVALUATION OF CONSTRUCTION AND CERTIFICATION	7

**EXIDE TECHNOLOGIES
BATON ROUGE SMELTER
EAST BATON ROUGE PARISH
BATON ROUGE, LOUISIANA**

**CONSTRUCTION QUALITY
ASSURANCE DOCUMENT
FOR
HAZARDOUS WASTE CONTAINMENT
BUILDING FLOOR UPGRADE**

NOVEMBER 2003

PREPARED BY:

**PROVIDENCE ENGINEERING AND ENVIRONMENTAL GROUP LLC
P.O. BOX 84380
BATON ROUGE, LOUISIANA 70884-4380
(225) 766-7400**

PROVIDENCE ENGINEERING PROJECT NO. 028-008



PROVIDENCE

ENGINEERING & ENVIRONMENTAL GROUP LLC

20031058

November 25, 2003

Louisiana Department of Environmental Quality
Office of Environmental Services
Permits Division
P.O. Box 4313
Baton Rouge, Louisiana 70821-4313
Attn: Ms. Karla Vidrine

Re: Exide Technologies
Hazardous Waste Containment Building Floor Upgrade
Construction QA Document and Certification
LAD008184137
AI#: 1396

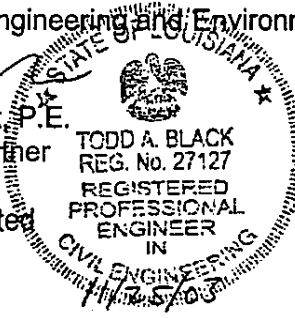
Dear Ms. Vidrine:

On behalf of Exide Technologies, Baton Rouge Smelter, Providence Engineering and Environmental Group LLC prepared this Construction Quality Assurance (QA) Document as documentation and Professional Engineering Certification of the recent floor upgrades at the Baton Rouge Smelter's Hazardous Waste Containment Building floor. Enclosed, please find two duplicate copies of the Construction Quality Assurance Document with certification by a registered engineer licensed in the state of Louisiana. Two copies of this document were previously received by the Louisiana Department of Environmental Quality, Environmental Technology Division on November 21, 2003.

Should you have any questions or comments, do not hesitate to contact Mr. Steve Krul at (225) 775-3040, ext. 142 or me at (225) 766-7400.

Sincerely,
Providence Engineering and Environmental Group LLC


Todd A. Black, P.E.
Managing Partner


TODD A. BLACK
REG. No. 27127
REGISTERED
PROFESSIONAL
ENGINEER
IN
CIVIL ENGINEERING

Enc: As stated

TAB/

cc: Steve Krul, Exide (w/o Attachment)

LDEQ, Office of Environmental Compliance, Enforcement Division
P.O. Box 4312
Baton Rouge, LA 70821-4312
(w/o Attachment)

use the vehicle washes to remove any accumulated waste prior to departure from the building.

§1802 Design and Operating Standards

- A. All containment buildings must comply with the following design standards:
1. the containment building must be completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-on) and to ensure containment of managed wastes;

RESPONSE

Exide's containment building is completely enclosed with floors, walls (primary barrier system) and a roof, with some of the walls providing openings necessary to accommodate operations. The ventilation system for the containment building keeps a constant inward air flow (negative pressure) on these openings which minimizes the potential for any fugitive emissions. These controls prevent the exposure of the lead bearing materials within the containment building to the elements, and ensure their containment.

2. the floor and containment walls of the unit, including the secondary containment system if required under LAC 33:V.1802.B, must be designed and constructed of materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit and to prevent failure due to pressure gradients, settlement, compression, uplift, physical contact with the hazardous wastes to which they are exposed, climatic conditions, and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls. The unit must be designed so that it has sufficient structural strength to prevent collapse or other failure. All surfaces to be in contact with hazardous wastes must be chemically compatible with those wastes. The administrative authority will consider standards established by professional organizations generally recognized by the industry, such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM), in judging the structural integrity requirements of LAC 33:V.1802.A. If appropriate to the nature of the waste management operation to take place in the unit, an exception to the structural strength requirement may be made for light-weight doors and windows that meet these criteria:
 - a. they provide an effective barrier against fugitive dust emissions under LAC 33:V.1802.C.1.d; and
 - b. the unit is designed and operated in a fashion that ensures that wastes will not actually come in contact with these openings;

RESPONSE

The floors and walls of Exide's containment building are designed to withstand the movement of personnel, waste, and handling equipment within the unit during the operating life of the unit and are appropriate for the physical and chemical characteristics of the





APPENDIX 11A

CONTAINMENT BUILDING CERTIFICATION DOCUMENT



MONITORING WELL DIAGRAM

PROJECT Ground Water Monitoring System Upgrade
Baton Rouge Facility

FOR Schuykill Metals Corporation
Baton Rouge, La.

WELL NO. W-18
JOB NO. 94-185
DATE February 8, 1995
TECHNICIAN J.R. Dyson

DEPT. (FEET)		SAMPLE	S.P.T. (Blows/Ft.) or Pkt. Pen. (TSF)	Drill Method: Auger 0 to 24'; Wet rotary 24 to 42'. Initial Water Level: 23'						Driller T. Lewis	Surface Elev. 73.9'	
				Compressive Strength (TSF)	Moisture Content (%)	Dry Unit Weight (PCF)	Atterberg		% Passing #200 Sieve		Rig GEFCO 1500	
						LL	PI		Symbol	MATERIAL CLASSIFICATION		WELL DIAGRAM
5										12" SILTY CLAY FILL with roots		
										MEDIUM TO STIFF TAN AND GRAY SILTY CLAY with ferrous nodules	(CL)	
10										STIFF TO VERY STIFF TAN AND LIGHT GRAY CLAY with silt streaks and pockets, and ferrous nodules		
15										--- slickensided @ 15'	(CH)	
20										FIRM TAN AND LIGHT GRAY CLAYEY SILT	(ML)	
25										STIFF TO VERY STIFF TAN AND LIGHT GRAY CLAY with silt streaks and pockets --- slickensided @ 25'	(CH)	
30										TAN AND LIGHT GRAY SANDY CLAY	(CL)	
										STIFF TAN AND LIGHT GRAY SILTY CLAY	(CL)	
35										VERY STIFF TAN AND LIGHT GRAY CLAY with silt pockets, seams, and streaks, and ferrous nodules		
40											(CH)	
45										Bottom @ 42'		
50												

NOTES:

- Shelby Tube Sample
- Split-spoon Sample
- Auger Sample

No water rise noted - Hole closed at 21.5'.
Hole reamed to 8" diameter.
* k = 4.17 x 10⁻⁷ cm/sec

- Bentonite-cement Grout
- Bentonite Pellets
- Filter Sand

MONITORING WELL DIAGRAM

PROJECT Ground Water Monitoring System Upgrade
Baton Rouge Facility

FOR Schuykill Metals Corporation
Baton Rouge, Louisiana

WELL NO. W-17
JOB NO. 94-185
DATE December 21-22, 1994
TECHNICIAN M. Prochaska

Drill Method: Auger 0 to 24'; Wet rotary 24 to 40'.

Driller E.T. Lamy

Surface Elev. 50.9'

Initial Water Level: 24'; Rose to 21.5' in 10 minutes.

Rig ARCO 550DD

Total Depth-Ft. 40

Compressive Strength (TSF)	Moisture Content (%)	Dry Unit Weight (PCF)	Atterberg		% Passing #200 Sieve
			LL	PI	
	23	104	47	28	
*	27	97	42	21	100

Symbol

MATERIAL CLASSIFICATION

WELL DIAGRAM

STIFF TAN, LIGHT BROWN AND LIGHT GRAY
VERY SILTY CLAY FILL

(CL)

VERY STIFF TO HARD TAN, LIGHT BROWN AND
LIGHT GRAY CLAY with slickensides, organic
streaks & silt pockets

---becomes HARD below 10'

---with calcareous nodules

(CH)

ALTERNATING LAYERS OF HARD BROWN AND GRAY
CLAY AND FIRM TO DENSE BROWN AND GRAY SILT

(CH-ML)

HARD LIGHT BROWN CLAY with slickensides &
silt pockets

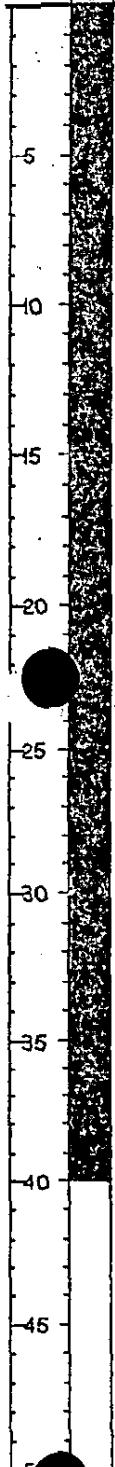
(CH)

Bottom @ 40'

DEPTH (FEET)

SAMPLE

S.P.T.
(Blows/Ft.)
or
Pkt. Pen.
(TSF)



NOTES:

- Shelby Tube Sample
- Split-spoon Sample
- Auger Sample

Hole reamed to 8" diameter to 34'.
34 to 40' (4" diameter) backfilled with pellets.
* K = 1.79 x 10⁻⁷ cm/sec

- Bentonite-cement Grout
- Bentonite Pellets
- Filter Sand

MONITORING WELL DIAGRAM

16

PROJECT Ground Water Monitoring System Upgrade
Baton Rouge Facility

FOR Schuykill Metals Corporation
Baton Rouge, Louisiana

WELL NO. W-18
JOB NO. 94-185
DATE December 22, 1994
TECHNICIAN J.R. Dyson

Drill Method: Auger 0 to 18'; Wet rotary 18 to 28'

Driller T. Lewis

Surface Elev. 45.2'

Initial Water Level: 18'; Rose to 5.5' in 80 minutes.

Rig GEFCO 1500

Total Depth-Ft. 28

Compressive Strength (TSF)	Moisture Content (%)	Dry Unit Weight (PCF)	Atterberg		% Passing #200 Sieve
			LL	PI	
	24	104	59	42	
*	29	95	29	3	97

MATERIAL CLASSIFICATION

WELL DIAGRAM

STIFF TAN SILTY CLAY FILL

(CL)

STIFF TO VERY STIFF TAN AND LIGHT GRAY CLAY

--with sand pockets & seams below 10'

(CH)

FIRM TAN SANDY SILT with clay

(ML)

VERY STIFF TAN AND LIGHT GRAY CLAY with sand & silt pockets & calcareous nodules

(CH)

Bottom @ 28'

ITS:

- Shelby Tube Sample
- Split-spoon Sample
- Auger Sample

Hole reamed to 8" diameter.
* k = 4.38 x 10⁻⁷ cm/sec

- Bentonite-cement Grout
- Bentonite Pellets
- Filter Sand

MONITORING WELL DIAGRAM



PROJECT Ground Water Monitoring System Upgrade
Baton Rouge Facility

FOR Schuykill Metals Corporation
Baton Rouge, Louisiana

WELL NO. W-13R

JOB NO. 94-185

DATE December 28, 1994

TECHNICIAN J.R. Gyson

Drill Method: Auger 0 to 18'; Wet rotary 18' to 50'.

Driller E.T. Lamy

Surface Elev. 78.9'

Initial Water Level: 7'; Rose to 8.5' in 15 minutes.

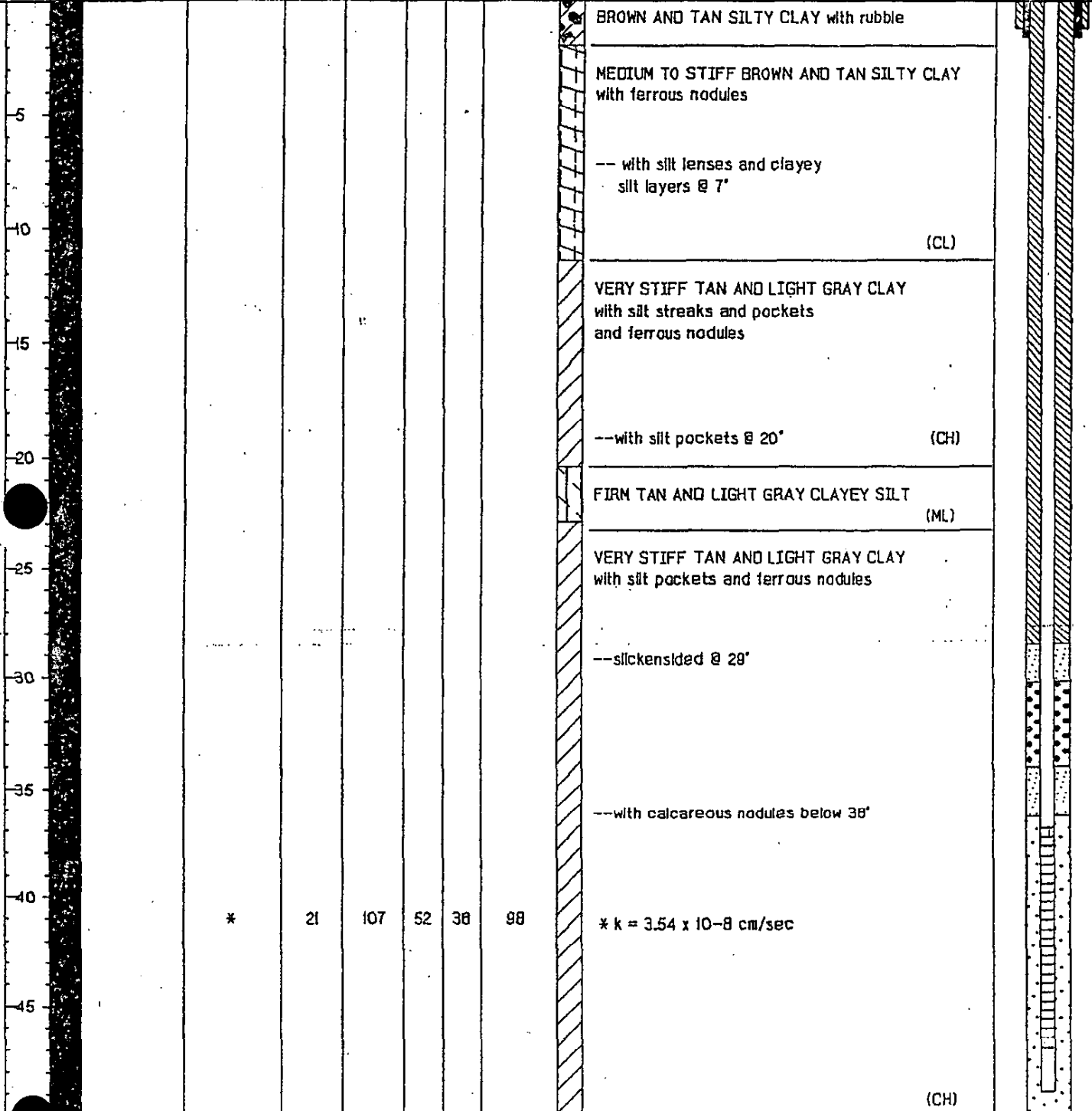
Rig ARCO 55000

Total Depth-Ft. 50

Compressive Strength (TSF)	Moisture Content (%)	Dry Unit Weight (PCF)	Atterberg		% Passing #200 Sieve
			LL	PI	

MATERIAL CLASSIFICATION

WELL DIAGRAM



REMARKS:

- Shelby Tube Sample
- Split-spoon Sample
- Auger Sample

Hole reamed to 8" diameter.
Begun 12/28/94. Completed 1/10/95.
8" of 8" diameter casing set.
Boring terminated at depth specified by D. Mann.

- Bentonite-cement Grout
- Bentonite Pellets
- Filter Sand

MONITORING WELL DIAGRAM



PROJECT Ground Water Monitoring System Upgrade
Baton Rouge Facility

FOR Schuykill Metals Corporation
Baton Rouge, Louisiana

WELL NO. W-12R
JOB NO. 84-185
DATE December 20, 1994
TECHNICIAN M. Prochaska

DEPTH (FEET)	SAMPLE	S.P.T. (Blows/Ft.) or Pkt. Pen. (TSF)	Drill Method: Auger 0 TO 14"; Wet rotary 14 To 40".					Driller	Surface Elev.	Total Depth-Ft.
			Initial Water Level: 12' Rose to 10.5' in 15 minutes	Compressive Strength (TSF)	Moisture Content (%)	Dry Unit Weight (PCF)	Atterberg			
							LL	PI	% Passing #200 Sieve	
5										
10										
15										
20					28	87	44	23		
25										
30										
35			*		22	104	34	18	98	
40										
45										
50										

MATERIAL CLASSIFICATION	WELL DIAGRAM
STIFF TAN CLAY FILL	
MEDIUM LIGHT GRAY, GRAY, AND BLACK SILT with organics (ML)	
STIFF TAN AND GRAY CLAY with silt pockets (CH)	
FIRM TAN AND LIGHT GRAY FINE SANDY SILT (ML)	
VERY STIFF LIGHT BROWN, TAN AND LIGHT GRAY CLAY with silty sand layers (CH)	
VERY STIFF BROWN, GRAY AND TAN CLAY with silt pockets and lenses — slickensided @ 20' — with Silty Clay layers below 21'	
HARD LIGHT BROWN AND GRAY CLAY with silt pockets and organics — slickensided @ 30'	
HARD LIGHT GRAY VERY SILTY CLAY (CL)	
Bottom @ 40'	

COMMENTS:

- Shelby Tube Sample
- Split-spoon Sample
- Auger Sample

Hole reamed to 8" diameter.
* k= 1.8 x 10⁻⁵

- Bentonite-cement Grout
- Bentonite Pellets
- Filter Sand

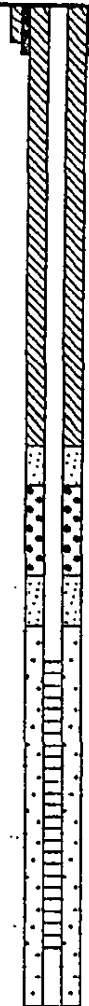


MONITORING WELL DIAGRAM

PROJECT Ground Water Monitoring System Upgrade
Baton Rouge Facility

FOR Schuykill Metals Corporation
Baton Rouge, Louisiana

WELL NO. W-4R
JOB NO. 94-185
DATE December 20-21, 1994
TECHNICIAN J.R. Dyson

DEPTH (FEET)		SAMPLE	S.P.T. (Blows/Ft.) or Pkt. Pen. (TSF)	Drill Method: Auger 0 to 12'; Wet rotary 12 to 34'.						Driller T. Lewis	Surface Elev. 43.5'	
Initial Water Level: 10'; Rose to 7' in 15 minutes.				Compressive Strength (TSF)	Moisture Content (%)	Dry Unit Weight (PCF)	Atterberg		% Passing #200 Sieve		Rig GEFCO 1500	Total Depth-Ft. 34
			LL				PI	MATERIAL CLASSIFICATION		WELL DIAGRAM		
5										MEDIUM TO STIFF TAN AND LIGHT GRAY CLAY FILL		
										(CL)		
10										SOFT TO MEDIUM DARK GRAY AND TAN SILTY CLAY with roots & organics		
										(CL)		
15				27	94	52	34			ALTERNATING LAYERS OF DARK GRAY SILTY SAND, SILTY CLAY AND SILT with organics & roots		
20										STIFF TO VERY STIFF TAN AND LIGHT GRAY CLAY with silt pockets, lenses & streaks ---with calcareous nodules		
25			*							---with traces of Fine Sand below 22'		
30												
35										(CH)		
40										Bottom @ 34'		
45												

NOTES:

- Shelby Tube Sample
- Split-spoon Sample
- Auger Sample

Hole reamed to 8" diameter.
* k = 3.84 x 10⁻⁸ cm/sec

- Bentonite-cement Grout
- Bentonite Pellets
- Filter Sand

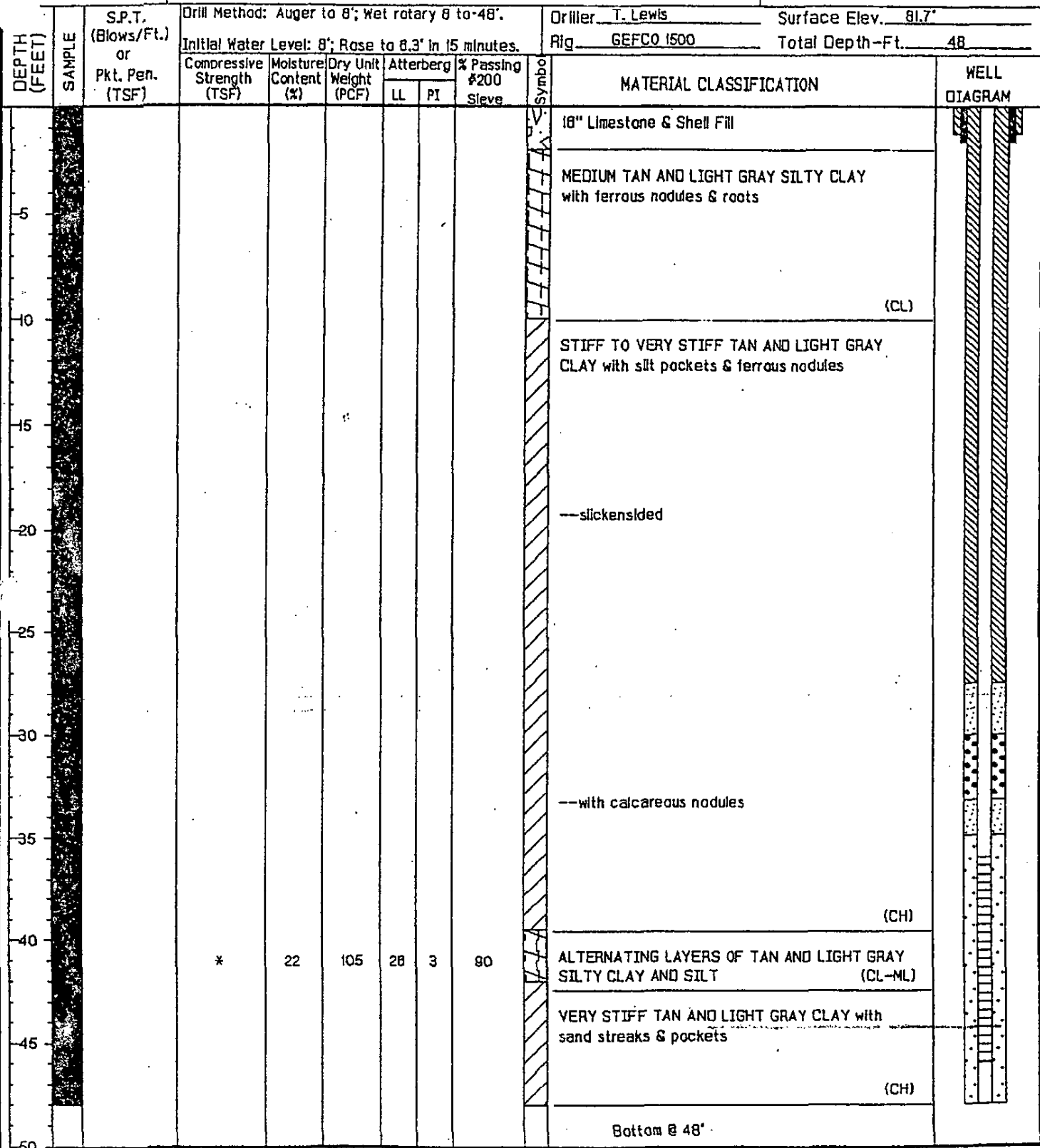


MONITORING WELL DIAGRAM

PROJECT Ground Water Monitoring System Upgrade
Baton Rouge Facility

FOR Schuykill Metals Corporation
Baton Rouge, Louisiana

WELL NO. W-1R
JOB NO. 94-185
DATE January 20, 1995
TECHNICIAN J.R. Dyson

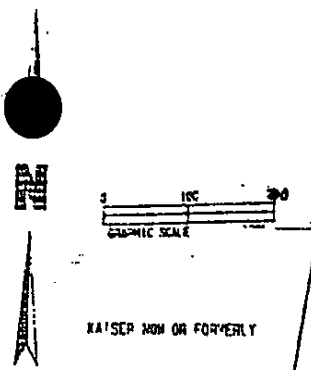


NOTES:

- Shelby Tube Sample
- Split-spoon Sample
- Auger Sample

Hole reamed to 8" diameter.
* k = 1.18 x 10⁻⁶ cm/sec

- Bentonite-cement Grout
- Bentonite Pellets
- Filter Sand

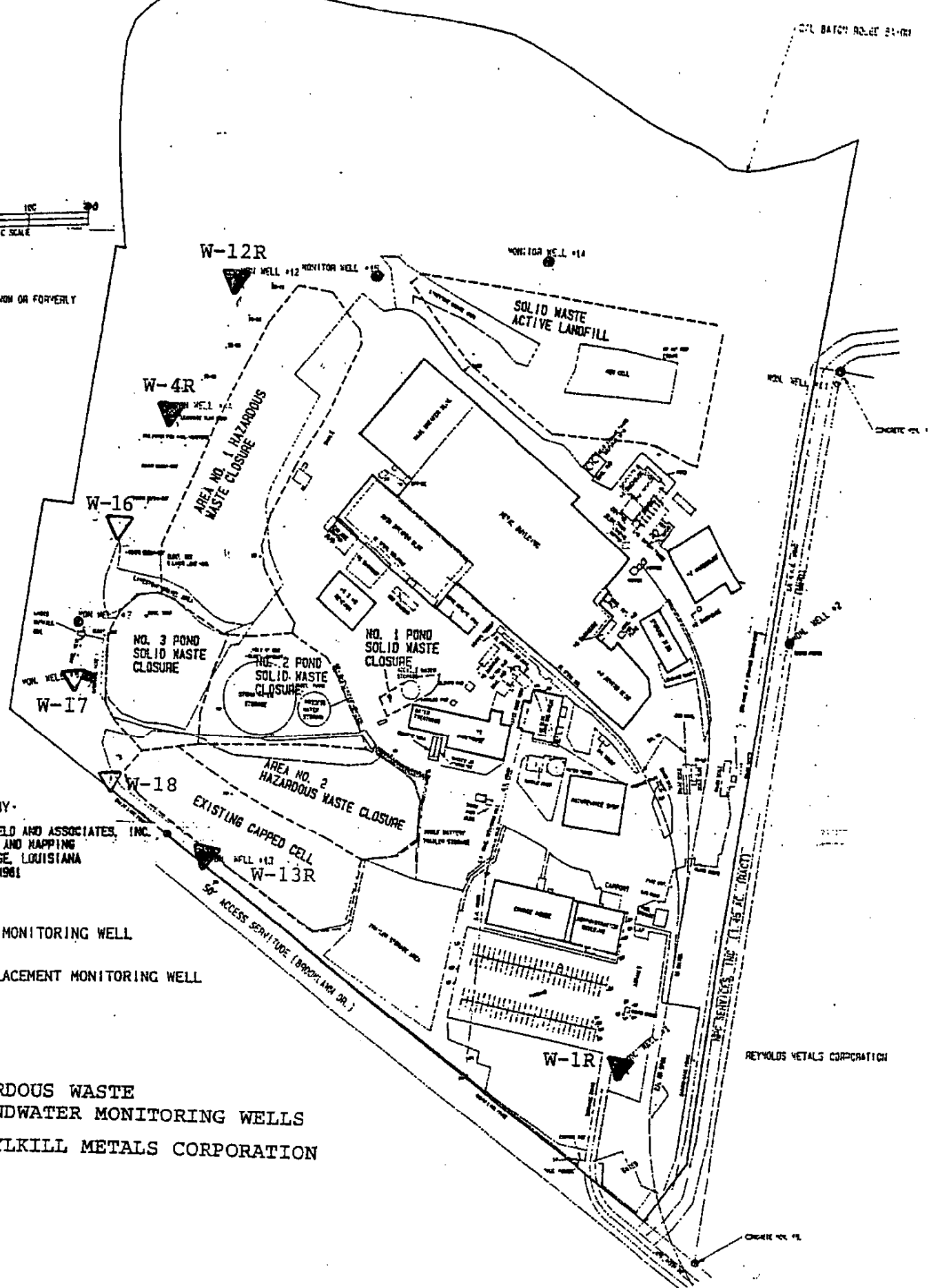


BASE MAP BY:

M.J. DEFIELD AND ASSOCIATES, INC.
SURVEYING AND MAPPING
BATON ROUGE, LOUISIANA
(504) 751-4981

- ▽ NEW MONITORING WELL
- ▼ REPLACEMENT MONITORING WELL

HAZARDOUS WASTE
GROUNDWATER MONITORING WELLS
SCHUYLKILL METALS CORPORATION



C-K ASSOCIATES, INC.

SOIL BORING LOG: B-7

CLIENT: Schuykill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: N/A
DATE DRILLED: 07/5/95	DRILLING METHOD: Direct-push	Y COORD.: N/A
TOTAL DEPTH: 30.0	WATER LEVEL (I): 12.0	WATER LEVEL (S): N/A
LOGGED BY: B. Moore	SURFACE ELEVATION: 48.0	TOC ELEVATION: N/A

Depth (ft bgs)	Core Sample	O V A (ppm)	Description	USCS	Lith.	Well Design	Remarks
0			Stiff light gray and brown CLAY w/Fe stains and nodules, dry	CL			
2			—turning medium				
4			—some very fine grained sand, damp				
6			—turning stiff, dry				
8			—interbedded w/clayey sand, wet				
10			Firm gray very fine grained Clayey SAND, wet	SC			
12			Firm gray coarse grained SAND, wet	SP			
14			Medium gray Sandy CLAY, damp	CL			
16			Hard light gray and brown CLAY, dry, w/Fe stains	CL			
18			—slickensided				
20			Very stiff light gray and brown slightly Silty CLAY, dry	CL			
22			—Fe staining				
24							
26							
28							
30			Boring terminated at 30' bgs Note: Boring drilled by direct-push technology. Initial water level measured in borehole.				
32							
34							

NOTES:

Approved: *SEN*



Initial Water Level
Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon



No
Recovery

OVALOG

C-K ASSOCIATES, INC.

SOIL BORING LOG: P-4/B-6

CLIENT: Schuykill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: 30 deg. 35' 10"
DATE DRILLED: 07/11-12/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: 91 deg. 14' 59"
TOTAL DEPTH: 102.0	WATER LEVEL (I): 9.0	WATER LEVEL (S): 18.63
LOGGED BY: B. Moore	SURFACE ELEVATION: 44.8	TOC ELEVATION: 47.47

Depth (ft bgs)	Core Sample	O V A (ppm)	Description	USCS	Lith.	Well Design	Remarks
78				SM			
80		0 *	Loose gray fine grained SAND, wet	SP			Top of Bentonite Seal (80')
82							Top of Sand Pack (83')
84							Top of Screen (85')
86		0 *	— fine to medium grained, dark gray				20/40 Sand
88							
90			— medium grained				2" Dia. 0.010-inch PVC Well Screen
92		0 *					Bottom of Screen (95')
94							0.5-foot Sump
96		0 *	— medium to coarse grained				
98							
100		0 *	Hard brown and gray Slightly Silty CLAY w/sand pockets, dry	CL			
102			Boring terminated at 102' bgs Note: Boring drilled w/wet rotary. Initial water level estimated from sample moisture.				Bottom of Borehole Note: Boring drilled with wet rotary
104							

NOTES:

Approved: *SEW*



Initial Water Level



Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon



Initial Water
Recovery
estimated
from sample
moisture.

SOIL LOG

C-K ASSOCIATES, INC.

SOIL BORING LOG: P-4/B-6

CLIENT: Schuykill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: 30 deg. 35' 10"
DATE DRILLED: 07/11-12/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: 91 deg. 14' 59"
TOTAL DEPTH: 102.0	WATER LEVEL (I): 9.0	WATER LEVEL (S): 18.63
LOGGED BY: B. Moore	SURFACE ELEVATION: 44.8	TOC ELEVATION: 47.47

Depth (ft bgs)	Core Sample	OVA (ppm)	Description	USCS	Lith.	Well Design	Remarks
52							
54							
56		0 *	—some silt and calcareous nodules	CL			
58							
60		0 *	Very stiff gray and brown incohesive Slightly Silty CLAY, brittle, dry slickensided, w/silt pockets, calcareous nodules	CL			
62							
64							
66		0 *	Loose brown medium grained SAND, wet	SP			
68							
70		0 *	Stiff gray CLAY w/Fe staining and large Fe nodules, dry	CL			
72							
74							
76		0 *	Firm gray Silty fine grained SAND, wet —some clay and Fe staining	SM			
78							

NOTES:

Approved: *SEN*



Initial Water Level



Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon



No
Recovery

STD 06

C-K ASSOCIATES, INC.

SOIL BORING LOG: P-4/B-6

CLIENT: Schuykill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: 30 deg. 35' 10"
DATE DRILLED: 07/11-12/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: 91 deg. 14' 59"
TOTAL DEPTH: 102.0	WATER LEVEL (I): 9.0	WATER LEVEL (S): 16.63
LOGGED BY: B. Moore	SURFACE ELEVATION: 44.8	TOC ELEVATION: 47.47

Depth (ft bgs)	Core Sample	O V A (ppm)	Description	USCS	Lith.	Well Design	Remarks
26		0 *					
28		0 *	Hard to dense light gray Clayey SAND, w/Fe staining, damp to dry	SC			
30		0 *					
32		0 *	Stiff brown and light gray very Silty CLAY, w/some sand, dry	CL			Annular Grout
34							
36		0 *	Firm light gray and brown Clayey SAND, dry	SC			
38			—w/Fe staining				
40		0 *					
42		0 *	Stiff light gray and brown Sandy CLAY, dry	CL			
44			—increasing sand				
46		0 *					
48			Hard greenish gray and brown CLAY, dry, w/Fe staining	CL			
50		0 *					
52		0 *	—Fe nodules, slickensides				

NOTES:

Approved: SEW



Initial Water Level



Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon



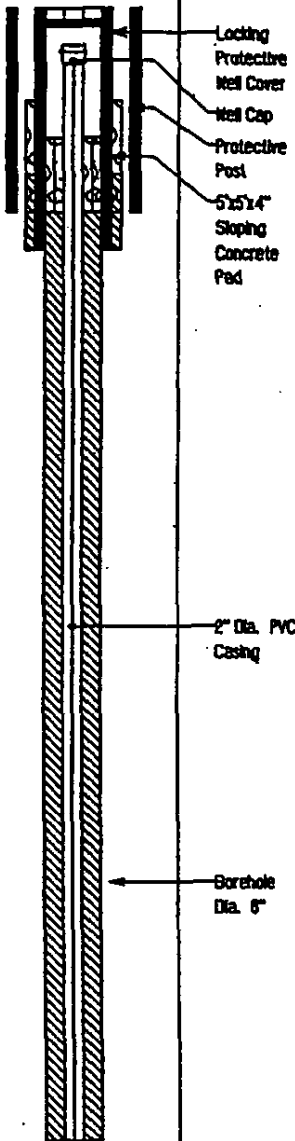
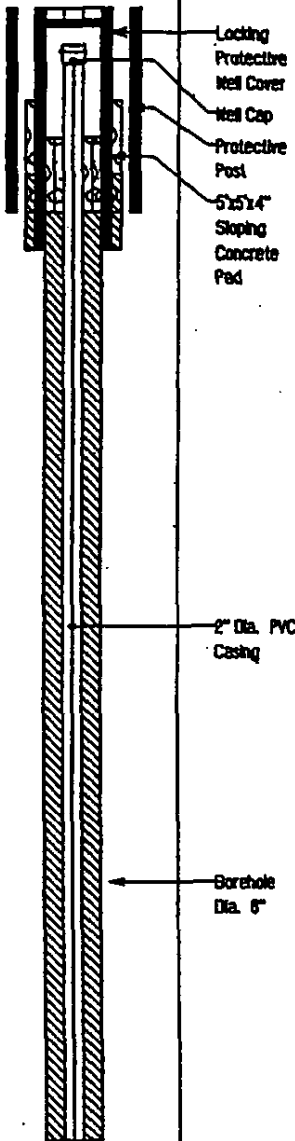
No
Recovery

ST01.06

C-K ASSOCIATES, INC.

SOIL BORING LOG: P-4/B-6

CLIENT: Schuykill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: 30 deg. 35' 10"
DATE DRILLED: 07/11-12/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: 91 deg. 14' 59"
TOTAL DEPTH: 102.0	WATER LEVEL (I): 9.0	WATER LEVEL (S): 10.83
LOGGED BY: B. Moore	SURFACE ELEVATION: 44.8	TOC ELEVATION: 47.47

Depth (ft bgs)	Core Sample	O V A (ppm)	Description	USCS	Lith.	Well Design	Remarks
0		0 *	Medium brown and gray CLAY w/Fe stains and nodules, dry	CL			
2		0 *					
4		0 *					
6		0 *					
8		0 *	Stiff gray and brown Silty CLAY w/Fe stains and nodules, dry	CL			
10		0 *	Dense light gray Silty very fine grained SAND, wet	SM			
12		0 *	Firm light gray Silty very fine grained SAND, wet	SC			2" Dia. PVC Casing
14		0 *					
16		0 *	Stiff brown and light gray Silty CLAY, dry	CL			
18		0 *	Firm greenish gray fine to medium grained SAND, wet	SP			
20		0 *	—some clay				
22		0 *	Stiff gray and light brown Silty CLAY, damp	CL			
24		0 *	Firm light gray and tan fine grained SAND, damp	SP			
26		0 *		SC			

NOTES:

Approved: *SGW*



Initial Water Level



Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon



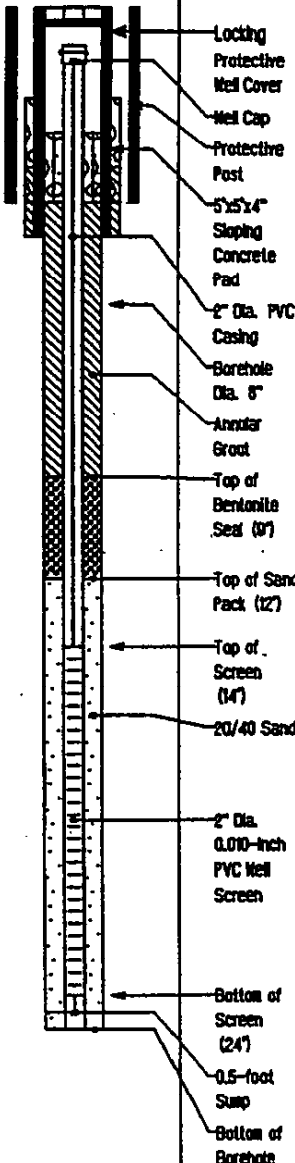
No
Recovery

STDLOG

C-K ASSOCIATES, INC.

SOIL BORING LOG: P-3/B-8

CLIENT: Schuykill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: 30 deg. 35' 10"
DATE DRILLED: 07/12/95	DRILLING METHOD: Rotary	Y COORD.: 91 deg. 14' 59"
TOTAL DEPTH: 25.0	WATER LEVEL (I): 9.0	WATER LEVEL (S): 3.11
LOGGED BY: B. Moore	SURFACE ELEVATION: 44.6	TOC ELEVATION: 47.83

Depth (ft bgs)	Core Sample	O V A (ppm)	Description	USCS	Lith.	Well Design	Remarks
0			Refer to Boring Log for P-4/B-8				
2							
4							
6							
8							
10							
12							
14							
16							
18							
20							
22							
24							
26							
28							

NOTES:

Approved: *SEM*



Initial Water Level



Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon



No
Recovery

ST-1061

C-K ASSOCIATES, INC.

SOIL BORING LOG: B-5

CLIENT: Schuylkill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: N/A
DATE DRILLED: 07/10-11/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: N/A
TOTAL DEPTH: 102.0	WATER LEVEL (I): 12.0	WATER LEVEL (S): N/A
LOGGED BY: B. Moore	SURFACE ELEVATION: 44.0	TOC ELEVATION: N/A

Depth (ft bgs)	Core Sample	O V A (ppt)	Description	USCS	Lith.	Well Design	Remarks
78				SP			
80		0 *	Hard gray slightly Silty CLAY, w/fine grained sand pockets, dry	CL			
82							
84							
86		0 *	Hard gray and brown CLAY, w/small seams of v.fine grained sand, dry	CL			
88			---w/large Fe nodules and Fe staining				
90		0 *	---slickensides				Grout
92							
94							
96		0 *					
98							
100		0 *	---turning reddish brown w/large Fe nodules				
102			Boring terminated at 102' bgs Note: Boring drilled with wet rotary. Initial water level estimated from sample moisture.				
104							

NOTES:

Approved:



Initial Water Level



Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon



No
Recovery

OVALOG

C-K ASSOCIATES, INC.

SOIL BORING LOG: B-5

CLIENT: Schuykill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: N/A
DATE DRILLED: 07/10-11/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: N/A
TOTAL DEPTH: 102.0	WATER LEVEL (I): 12.0	WATER LEVEL (S): N/A
LOGGED BY: B. Moore	SURFACE ELEVATION: 44.0	TOC ELEVATION: N/A

Depth (ft bgs)	Core Sample	O V A (ppa)	Description	USCS	Lith.	Well Design	Remarks
52				CL			
54							
56		0 *					
58							
60		0 *					
62							
64							
66		0 *	Firm brown Clayey SAND, damp, interbedded w/brown fine grained sand layers, wet w/Fe staining	SC			Grout
68							
70		0 *	Stiff dark gray CLAY, w/small slit seam, dry	CL			
72							
74							
76		0 *	Loose brown medium grained SAND, wet	SP			
78							

NOTES:

Approved: *SEM*



Initial Water Level



Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon



No
Recovery

OVALOG

C-K ASSOCIATES, INC.

SOIL BORING LOG: B-5

CLIENT: Schuykill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: N/A
DATE DRILLED: 07/10-11/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: N/A
TOTAL DEPTH: 102.0	WATER LEVEL (I): 12.0	WATER LEVEL (S): N/A
LOGGED BY: B. Moore	SURFACE ELEVATION: 44.0	TOC ELEVATION: N/A

Depth (ft bgs)	Core Sample	O V A (ppm)	Description	USCS	Lith.	Well Design	Remarks
26		0 *	—w/Fe stains and nodules	CL			
28		0 *	—brown				
30		0 *					
32		0 *					
34			—mottled				
36		0 *					
38							
40		0 *	—hard tan to brown, w/some very fine grained sand, dry				Grout
42							
44							
46		0 *					
48							
50		0 *	—slickensided, brown and gray				
52							

NOTES:

Approved: *SCW*



Initial Water Level



Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon



No
Recovery

OVAL 06

C-K ASSOCIATES, INC.

SOIL BORING LOG: P-2/B-4

CLIENT: Schuykill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: 30 deg. 35' 10"
DATE DRILLED: 07/5/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: 91 deg. 14' 57"
TOTAL DEPTH: 30.0	WATER LEVEL (I): 14.0	WATER LEVEL (S): 3.67
LOGGED BY: B. Moore	SURFACE ELEVATION: 42.64	TOC ELEVATION: 44.43

Depth (ft bgs)	Core Sample	O V A (ppm)	Description	USCS	Lith.	Well Design	Remarks
28		0 *		CL			
28		0 *	—Fe nodules				
30			Boring terminated at 30' bgs				
32							
34							
36							
38							
40							
42							
44							
46							
48							
50							
52							

NOTES:

Approved: *SEW*



Initial Water Level



Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon











No
Recovery

STDL 06

C-K ASSOCIATES, INC.

SOIL BORING LOG: B-5

CLIENT: Schuykill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: N/A
DATE DRILLED: 07/10-11/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: N/A
TOTAL DEPTH: 102.0	WATER LEVEL (I): 12.0	WATER LEVEL (S): N/A
LOGGED BY: B. Moore	SURFACE ELEVATION: 44.0	TOC ELEVATION: N/A

Depth (ft bgs)	Core Sample	O V A (ppm)	Description	USCS	Lith.	Well Design	Remarks
0		0 *	Medium light gray to brown CLAY w/Fe stains and nodules, dry	CL			
2		0 *					
4		0 *					
6		0 *	—turning soft				
8		0 *		CL			
10		0 *	Soft gray Silty CLAY, dry				
12		0 *	—increasing silt w/very fine grained sand, damp				
14		0 *	Firm gray very fine grained SAND, wet	SC			Grout
16		0 *	Medium dark gray to black CLAY w/some silt, damp	CL			
18		0 *	Firm gray very fine grained SAND, wet	SP			
20		0 *	Soft greenish gray Silty CLAY, interbedded w/ damp black organic peat layers	CL			
22		0 *					
24		0 *	Hard green CLAY, w/some very fine grained sand, dry	CL			
26		0 *	—slickensides				

NOTES:

Approved SEN



Initial Water Level



Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon



No
Recovery

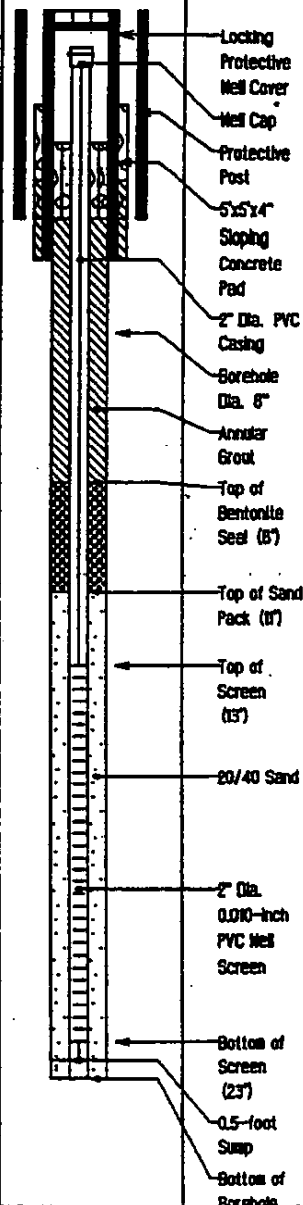
OVALOG

C-K ASSOCIATES, INC.

SOIL BORING LOG: P-2/B-4

CLIENT: Schuykill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: 30 deg. 35' 10"
DATE DRILLED: 07/5/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: 91 deg. 14' 57"
TOTAL DEPTH: 30.0	WATER LEVEL (I): 14.0	WATER LEVEL (S): 3.87
LOGGED BY: B. Moore	SURFACE ELEVATION: 42.84	TOC ELEVATION: 44.43

Depth (ft bgs)	Core Sample	O V A (ppm)	Description	USCS	Lith.	Well Design	Remarks
0			Stiff light gray and brown CLAY w/Fe stains and nodules, dry	CL			
2							
4			—turning medium, wet				
6			—turning v.stiff, dry				
8							
10			—light gray w/Fe stains				
12							
14			Loose gray and light brown Clayey SAND, wet	SC			
16							
18			Very stiff to hard brown CLAY, dry	CL			
20			—slickensided, w/Fe stains				
22							
24			—some silt				
26			—interbedded w/black organic soft clay layers (peat)				



NOTES:

Approved: *SEN*



Initial Water Level



Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon



No
Recovery

ST10106

C-K ASSOCIATES, INC.

SOIL BORING LOG: B-3

CLIENT: Schuylkill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: N/A
DATE DRILLED: 07/18-19/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: N/A
TOTAL DEPTH: 100.0	WATER LEVEL (I): 42.0	WATER LEVEL (S): N/A
LOGGED BY: B. Moore	SURFACE ELEVATION: 75.0	TOC ELEVATION: N/A

Depth (ft bgs)	Core Sample	OVA (ppm)	Description	USCS	Lith.	Well Design	Remarks
78				CL			
80		0 *					
82							
84							
86		0 *	Hard gray Sandy CLAY, dry	CL			
88							
90		0 *	Hard brown and gray CLAY, w/slickensides, dry	CL			
92			— slickensides, dry				
94							
96		0 *					
98							
100		0 *	Loose grown medium grained SAND, wet	SP			
102			Stiff brown to gray Sandy CLAY, damp	CL			
104			Boring terminated at 102' bgs Note: boring drilled with wet rotary. Initial water level estimated from sample moisture.				

NOTES:

Approved: *SEW*



Initial Water Level



Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon



No
Recovery

OVALOG

C-K ASSOCIATES, INC.

SOIL BORING LOG: B-3

CLIENT: Schuylkill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: N/A
DATE DRILLED: 07/18-19/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: N/A
TOTAL DEPTH: 100.0	WATER LEVEL (I): 42.0	WATER LEVEL (S): N/A
LOGGED BY: B. Moore	SURFACE ELEVATION: 75.0	TOC ELEVATION: N/A

Depth (ft bgs)	Core Sample	O V A (ppm)	Description	USCS	Lith.	Well Design	Remarks
52		0 *	Hard gray CLAY, dry	CL			
54		0 *	---w/1-inch sandy clay lens				
56		0 *	---slicksides filled w/very fine sand				
58		0 *	---mottled gray and brown				
60		0 *					
62		0 *	---Fe stains				
64		0 *					
66		0 *					
68		0 *					
70		0 *	---hard reddish brown, w/Fe nodules				
72							
74							
76		0 *					
78							

NOTES:

Approved: SEN



Initial Water Level



Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon



No
Recovery

OVALOG

C-K ASSOCIATES, INC.

SOIL BORING LOG: B-3

CLIENT: Schuylkill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: N/A
DATE DRILLED: 07/18-19/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: N/A
TOTAL DEPTH: 100.0	WATER LEVEL (I): 42.0	WATER LEVEL (S): N/A
LOGGED BY: B. Moore	SURFACE ELEVATION: 75.0	TOC ELEVATION: N/A

Depth (ft bgs)	Core Sample	O V A (ppm)	Description	USCS	Lith.	Well Design	Remarks
26		0 *	Very stiff brown to gray CLAY, w/slickensides, dry	CL			
28		0 *					
30		0 *	—w/Fe stains and large nodules				
32		0 *					
34		0 *	—hard, green and tan				
36		0 *					
38		0 *					
40		0 *					
42		0 *	Very soft gray Clayey SAND, wet, w/Fe stains	SC			
44		0 *	Firm gray SAND, very fine grained, wet	SP			
46		0 *	—loose				
48		0 *	Hard brown to gray CLAY, dry, w/some silt pockets	CL			
50		0 *	—slickensides, w/Fe stains				
52		0 *	Firm gray very fine grained SAND, wet, interbedded w/clay lenses	SP			
				CL			

Grout

NOTES:

Approved: 173



Initial Water Level



Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon















No
Recovery

OVALOG

C-K ASSOCIATES, INC.

SOIL BORING LOG: B-3

CLIENT: Schuykill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: N/A
DATE DRILLED: 07/18-19/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: N/A
TOTAL DEPTH: 100.0	WATER LEVEL (I): 42.0	WATER LEVEL (S): N/A
LOGGED BY: B. Moore	SURFACE ELEVATION: 75.0	TOC ELEVATION: N/A

Depth (ft bgs)	Core Sample	O V A (ppm)	Description	USCS	Lith.	Well Design	Remarks
0							
2		0 *	Soft to medium light gray Silty CLAY w/Fe nodules and stains, dry	CL			
4		0 *					
6		0 *	—light brown to gray				
8		0 *					
10		0 *	Soft brown to light gray very Silty CLAY, wet	CL			
12		0 *					
14		0 *	Very stiff to hard light gray to tan CLAY, dry	CL			
16		0 *	—w/Fe nodules and stains				
18		0 *					
20		0 *	—slickensides				
22		0 *					
24		0 *	Firm brown to gray Silty SAND, very fine grained, damp to wet	CL			
26		0 *	—increasing clay				
		0 *	Soft light gray to tan Sandy CLAY, damp	CL			
			Medium light brown Silty CLAY	CL			

NOTES:

Approved: SEN



Initial Water Level



Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon



No
Recovery

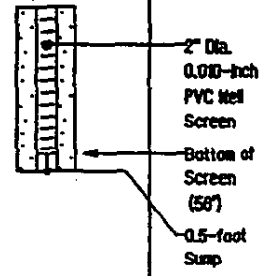
OVALOG

C-K ASSOCIATES, INC.

SOIL BORING LOG: P-1/B-2

CLIENT: Schuykill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: 30 deg. 35' 12"
DATE DRILLED: 07/13-14/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: 91 deg. 14' 58"
TOTAL DEPTH: 70.0	WATER LEVEL (I): 47	WATER LEVEL (S): 30.87
LOGGED BY: B. Moore	SURFACE ELEVATION: 77.80	TOC ELEVATION: 80.10

Depth (ft bgs)	Core Sample	O V A (ppm)	Description	USCS	Lith.	Well Design	Remarks
52		0 *		SP			
54		0 *	Loose gray Clayey SAND, wet	SC			
56		0 *	Hard gray CLAY, w/silty sand packets, damp	CL			
58		0 *	—w/Fe stains and nodules				
60		0 *	—dry				
62		0 *	—slickensided				
64		0 *	—red w/Fe nodules and stains				
66		0 *					
68		0 *	—gray to tan				
70		0 *	Boring terminated at 70' bgs Note: Boring drilled with wet rotary. Initial water level estimated from sample moisture.				
72							
74							
76							
78							



NOTES:

Approved: *SEN*

Initial Water Level
 Static Water Level
 Hand Grab
 Shelby Tube
 Split Spoon
 No Recovery

STBLOG

C-K ASSOCIATES, INC.

SOIL BORING LOG: P-1/B-2

CLIENT: Schuylkill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: 30 deg. 35' 12"
DATE DRILLED: 07/13-14/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: 91 deg. 14' 58"
TOTAL DEPTH: 70.0	WATER LEVEL (I): 47	WATER LEVEL (S): 30.87
LOGGED BY: B. Moore	SURFACE ELEVATION: 77.60	TOC ELEVATION: 80.10

Depth (ft bgs)	Core Sample	OVA (ppm)	Description	USCS	Lith.	Well Design	Remarks
26				CL			
28			Hard to very stiff red/brown CLAY, w/Fe stains and nodules, dry, slickensides	CL			
30			—w/calcareous nodules				
32			—light gray to brown				
34							
36			Hard brown Sandy Clayey SILT, wet	ML			
38			—very fine grained sand				
40							
42			Hard gray CLAY, dry, w/slickensides w/v. fine grained sand and silt seams	CL			Top of Bentonite Seal (41')
44							Top of Sand Pack (44')
46							Top of Screen (46')
48			Loose gray v. fine grained SAND, wet	SP			
50			—w/1" medium gray clay layer				20/40 Sand
52							

NOTES:

Approved: *SEN*



Initial Water Level



Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon



No
Recovery

ST0106

C-K ASSOCIATES, INC.

SOIL BORING LOG: P-1/B-2

CLIENT: Schuykill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: 30 deg. 35' 12"
DATE DRILLED: 07/13-14/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: 91 deg. 14' 58"
TOTAL DEPTH: 70.0	WATER LEVEL (I): 47	WATER LEVEL (S): 30.87
LOGGED BY: B. Moore	SURFACE ELEVATION: 77.80	TOC ELEVATION: 80.10

Depth (ft bgs)	Core Sample	O V A (ppm)	Description	USCS	Lith.	Well Design	Remarks
0		0 *	Stiff reddish brown slightly Silty CLAY w/Fe nodules and stains, dry	CL			Locking Protective Well Cover
2		0 *					Well Cap
4		0 *					Protective Post
6		0 *					5'x5'x4" Sloping Concrete Pad
8		0 *	—increasing silt, wet				
10		0 *	Very soft brown very Silty CLAY, wet	CL			
12		0 *	Hard brown to light gray CLAY, w/Fe nodules and stains, dry	CL			2" Dia. PVC Casing
14		0 *					
16		0 *	—slickensided				Borehole Dia. 6"
18		0 *					
20		0 *					
22		0 *	Firm brown Silty very fine grained SAND, wet	SM			
24		0 *	—some clay				
26		0 *	Soft brown and light gray very Silty CLAY, w/ some sand, wet	CL			Annular Grout

NOTES:

Approved: *SEN*



Initial Water Level
Static Water Level



Hand
Grab



Shelby
Tube



Split
Spoon







No
Recovery

STO LOG

C-K ASSOCIATES, INC.

SOIL BORING LOG: B-1

CLIENT: Schuylkill Metals Corp	LOCATION: Baton Rouge, LA	PROJECT NO.: 24-502
DRILLER: Singley	PROJECT NAME: Solid Waste Permit	X COORD.: N/A
DATE DRILLED: 07/17/95	DRILLING METHOD: Direct-push/Rotary	Y COORD.: N/A
TOTAL DEPTH: 70.0	WATER LEVEL (I): 46.0	WATER LEVEL (S): N/A
LOGGED BY: B. Moore	SURFACE ELEVATION: 77.0	TOC ELEVATION: N/A

Depth (ft bgs)	Core Sample	OVA (ppm)	Description	USCS	Lith.	Well Design	Remarks
52							
54		0 *	Dense light gray to tan fine grained SAND, wet	SP			
56		0 *	Stiff light brown to gray Silty Sandy CLAY, dry, w/Fe stains	CL			
58		0 *					
60		0 *	Hard brown to gray CLAY, dry, w/Fe stains	CL			
62		0 *					
64		0 *					
66		0 *	— slickensides, Fe nodules				
68		0 *					
70		0 *	Boring terminated at 70' bgs Note: Boring drilled with wet rotary. Initial water level estimated from sample moisture.				
72							
74							
76							
78							

NOTES:

Approved: scw



Initial Water Level



Static Water Level



Hand
Grab



Shelby
Tube



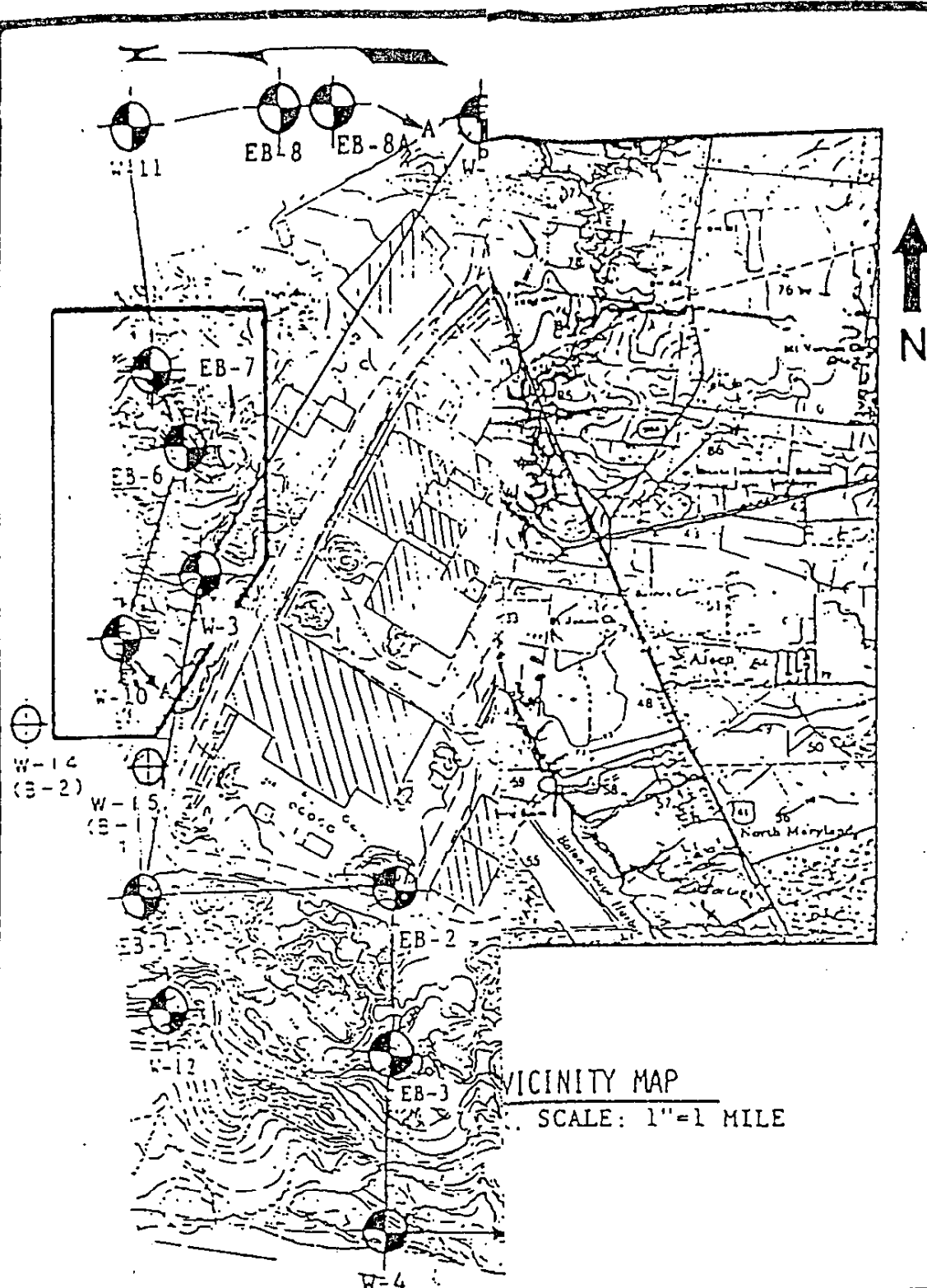
Split
Spoon



No
Recovery

OVALOG





VICINITY MAP

SCALE: 1"=1 MILE

BAYOU BATON ROUGE

SITE

EXISTING LEAD
PRODUCTION PLANT
BATON ROUGE, LOUISIANA

GID
C

GDC ENGINEERING INC.
CONSULTING ENGINEERS
822 NEOSHO AVENUE
BATON ROUGE

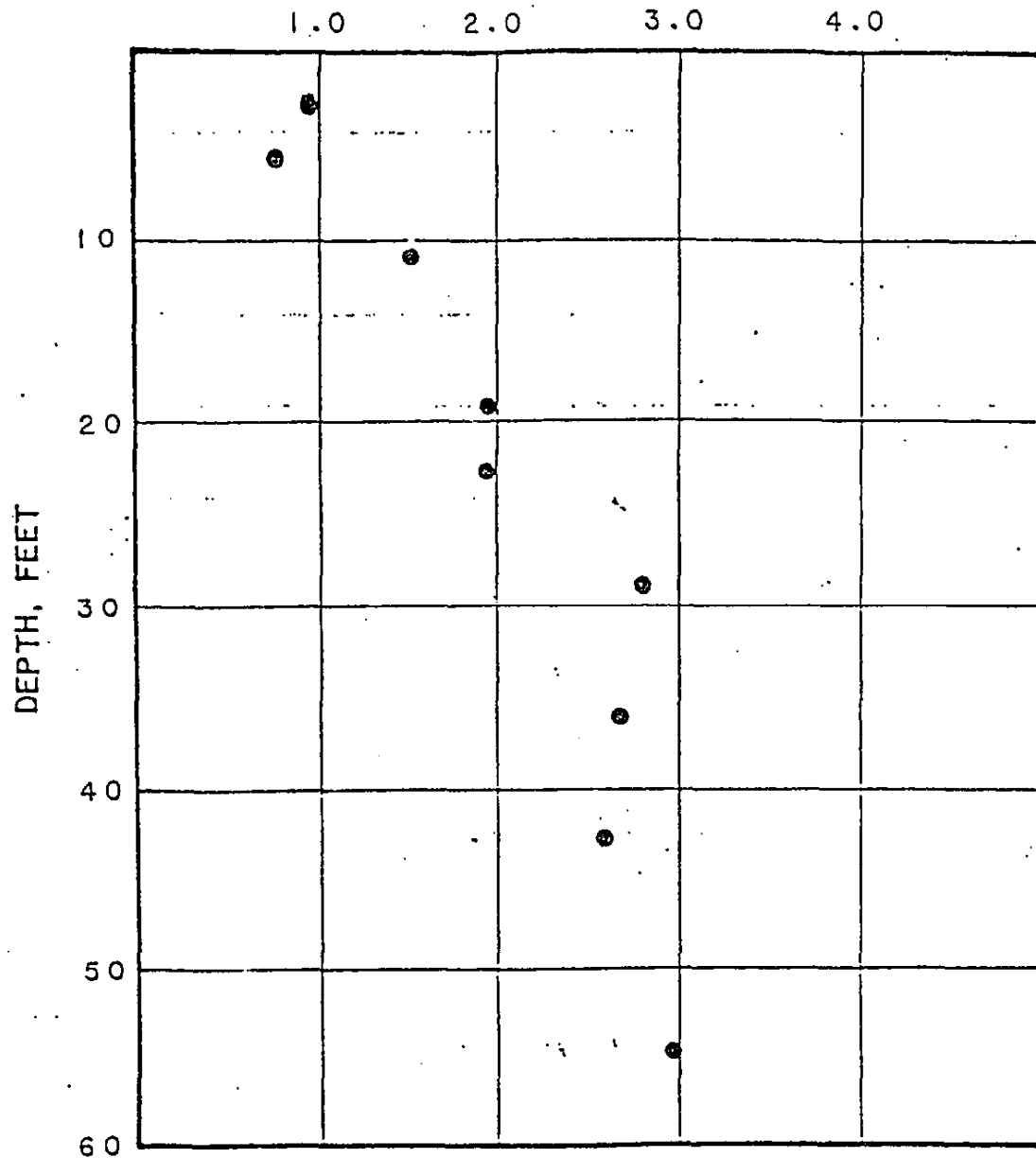
SCHUYLKILL METALS
BATON ROUGE, LOUISIANA

A.L. 11/14/85
C.D. 11/15/85 85C5465

SITE PLAN AND
BORING LOCATIONS

SHEAR STRENGTH

SHEAR STRENGTH, KSF



SCHUYLKILL METALS
CORP.

BATON ROUGE, LOUISIANA

Drawn by	EBK	12/23	Proj. No. 86-538
Engineer	JTB	12/29	
Checked by	TF	12/24/82	Fig. No. 2

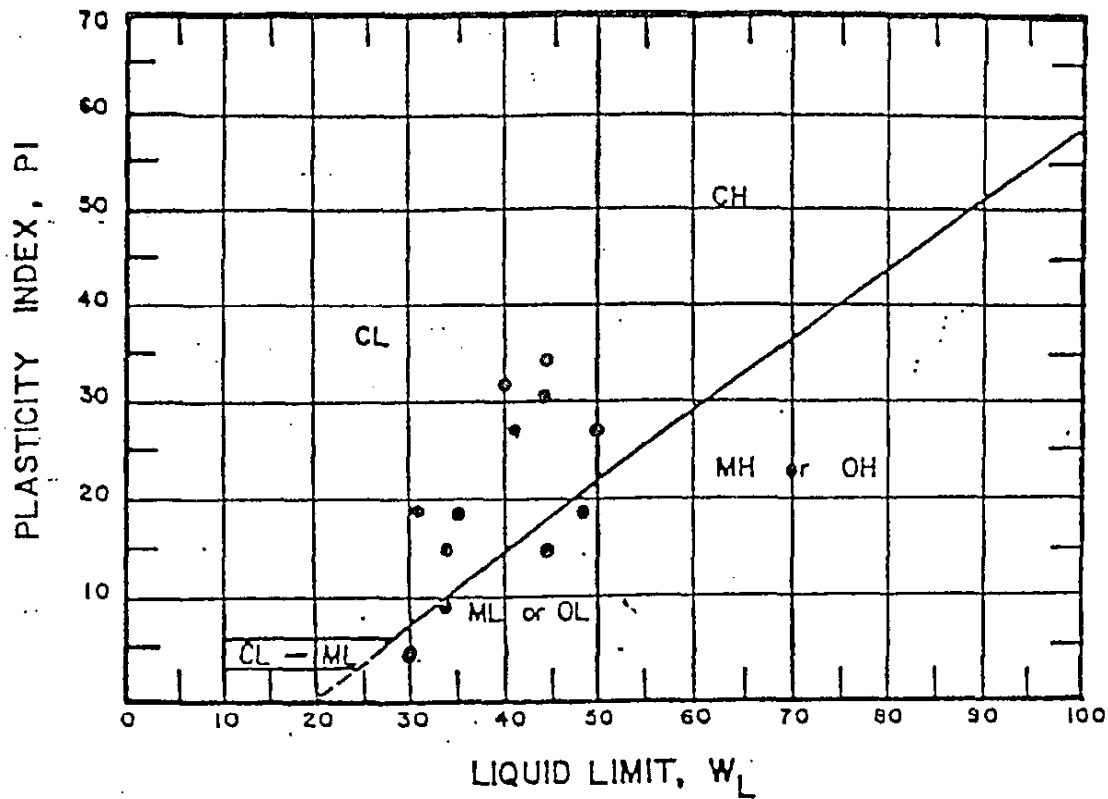


GDC ENGINEERING INC.
CONSULTING ENGINEERS

(504) 383-8554

322 NEOSHO AVENUE
BATON ROUGE, LA 70802

PLASTICITY CHART



Schryldill Metals Corp.
Eaton Rouge, LA.

Drawn by	SBH	12/22/86	Proj. No. 86-538
Engineer	TE	12/22/86	
Checked by	HAE	12/23/86	Fig. No. 1



GDC ENGINEERING INC.
CONSULTING ENGINEERS

822 NIOSHO AVENUE
BATON ROUGE, LA. 70802
(504) 383-8554

PLATE N^o

BORING LOG

PROJECT NAME: Schuykill Metals

PROJECT NO 77-350

BORING B-2.

DATE 12/9/96

LOCATION: Baton Rouge, Louisiana

BORING TYPE

G.S. ELEVATION COORDINATES N E

ENG/LOGGER MS/SIR

ELEVATION (FEET)	DEPTH (FEET)	SPT or P	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	SAMPLE	PROFILE	DESCRIPTION
		1.7p							ML, CLAYEY SILT, brown, organic matter, medium rootlets to a depth of 2 feet
		1.2p	73	30					
		2.0p							
		2.0p	97	24					
	5	1.2p							
		2.0p	91	25	47	19			
		0.7p							
		1.0p	91	25					
		1.0p							
	10	1.7p	100	21					
		0.5p							traces of fine sand lenses in the interval 16 to 20 feet $K_h = 1.2 \times 10^{-8}$ cm/sec.
		2.0p	93	21					
		3.0p							
		4.5+p	100	18					
	15	2.7p							
		3.2p	99	19	30	5			
		0.5p							
		3.2p	96	20					
		4.5p							
	20	4.5p	96	25					
		3.0p							CL, SILTY CLAY, light gray, tan with red, organic material, very stiff stiff
		3.0p	96	23	34	9			
		2.5p							
		2.0p	100	24					
	25	4.5+p							
		4.5+p	108	18					
		4.2p							
		3.7p	103	21					
		3.5p							
	30	2.7p	98	21					
		3.5p							ML, CLAYEY SILT, light gray with red, organic matter, stiff
		3.5p	96	22	50	26			
		4.5p							
		3.7p	94	23					
	35	4.5p							
		3.5p	96	25					
		4.0p							
		4.0p	92	26					
		4.0p							
		4.0n		24					



SHELBY TUBE

SPLIT SPOON

AUGER

NO RECOVERY

☐ INITIAL WATER LEVEL

☒ WATER LEVEL (AFTER _____)

SPT - STANDARD PENETRATION TEST (BLOWS/FT)

P - POCKET PENETROMETER READING (TSF)

REMARKS:

GID
G

PLATE NO 3

ENG/LOGGER TTE/SMR

PLATE NO 2

PLATE NO. _____

LOG OF BORING

PROJECT: Probe Borings
Baton Rouge, Louisiana

FOR: Schuylkill Metals Corporation
Baton Rouge, Louisiana

BORING 13
FILE 84-184
DATE 27 Dec. 1984
TECHNICIAN RCZ

☐ Classification Sample (not retained for laboratory testing)

☐ UNDISTURBED SAMPLE

☒ STANDARD PENETRATION TEST

BORING DEPTH 10 Feet

DEPTH
FEET

SAMPLES

0

Stiff tan and light gray clay with silt traces and ferrous nodules

Stiff tan and light gray clay with silt streaks and ferrous nodules

5

Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules

Stiff tan and light gray clay with ferrous nodules

Stiff tan and light gray clay with ferrous nodules

10

Boring 14

Boring Depth 12 Feet

0

Soft tan and light gray silty clay with roots

Soft tan and light gray slightly silty clay with organic matter and roots

5

Very soft tan and light gray slightly silty clay with silt streaks, pockets, and ferrous nodules

Soft tan and light gray slightly silty clay with silt streaks, pockets, and ferrous nodules

Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules

10

Stiff tan and light gray slightly silty clay with silt streaks, pockets, and ferrous nodules

15

LOG OF BORING

PROJECT: Probe Borings
Baton Rouge, Louisiana

FOR: Schuykill Metals Corporation
Baton Rouge, Louisiana

BORING 11
FILE 84-184
DATE 27 Dec. 1984
TECHNICIAN RCZ

DEPTH FEET	SAMPLES	Description
	<input type="checkbox"/> Classification Sample (not retained for laboratory testing) <input type="checkbox"/> UNDISTURBED SAMPLE <input checked="" type="checkbox"/> STANDARD PENETRATION TEST BORING DEPTH <u>10 Feet</u>	
0		Soft tan and light gray clay with silt streaks, pockets, and wood
		Firm tan and light gray silt with gravel
5		Firm tan and light gray silt with 6 inch stiff clay layer
		Stiff tan and light gray clay
10		Stiff tan and light gray clay
Boring <u>12</u> Boring Depth <u>14 Feet</u>		
0		Firm tan and light gray silt with roots
		Firm dark gray organic silt
5		Very soft gray clay with organic matter
		Very soft gray clay with organic matter
10		Soft tan and light gray clay with organic matter
		Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules
		Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules
15		

LOG OF BORING

PROJECT: Probe Borings
Baton Rouge, Louisiana

FOR: Schuylkill Metals Corporation
Baton Rouge, Louisiana

BORING 9
FILE 84-184
DATE 27 Dec. 1984
TECHNICIAN RCZ

DEPTH FEET	SAMPLES	<div style="display: flex; justify-content: space-between; align-items: center;"> <div> <input type="checkbox"/> Classification Sample (not retained for laboratory testing) <input type="checkbox"/> UNDISTURBED SAMPLE <input checked="" type="checkbox"/> STANDARD PENETRATION TEST </div> <div style="text-align: right;">BORING DEPTH <u>12 Feet</u></div> </div>
0		Firm dark gray organic clay
		Very soft tan and light gray silty clay with silt streaks, pockets, and ferrous nodules
5		Very soft tan and light gray clay with silt streaks, pockets, and ferrous nodules
		Soft tan and light gray clay with silt streaks, pockets, and ferrous nodules
		Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules
10		Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules

Boring <u>10</u>		
Boring Depth <u>14 Feet</u>		
0		Firm dark gray organic silt
		Very soft tan and light gray silty clay with silt streaks, pockets, and ferrous nodules
5		Very soft tan and light gray slightly silty clay with silt streaks, pockets, and ferrous nodules
		Soft tan and light gray slightly silty clay with silt streaks, pockets, and ferrous nodules
		Very soft tan and light gray silty clay with silt streaks, pockets, and ferrous nodules
10		Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules
		Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules
15		

LOG OF BORING

PROJECT: Probe Borings: Baton Rouge, Louisiana		BORING <u>7</u> FILE <u>34-184</u> DATE <u>27 Dec. 1984</u> TECHNICIAN <u>RCZ</u>	
FOR: Schuylkill Metals Corporation Baton Rouge, Louisiana			

DEPTH FEET	SAMPLES	Description	BORING DEPTH
0	<input type="checkbox"/>	Classification Sample (not retained for laboratory testing)	12 Feet
	<input type="checkbox"/>	UNDISTURBED SAMPLE	
	<input checked="" type="checkbox"/>	STANDARD PENETRATION TEST	
0		Soft tan and light gray slightly silty clay with silt streaks, pockets, and ferrous nodules	
		Soft tan and light gray clay with silt streaks, pockets, and ferrous nodules	
5		Stiff tan and light gray clay with silt traces and ferrous nodules	
		Firm tan and light gray clayey silt	
		Firm tan and light gray silt with 6 inch stiff clay layer	
10		Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules	

			Boring <u>8</u>
			Boring Depth <u>18 Feet</u>
10		Firm dark gray organic silt	
		Wood	
5		Stiff tan and light gray clay with silt traces and ferrous nodules	
		Medium tan and light gray clay with silt traces and ferrous nodules	
		Stiff tan and light gray clay with silt traces, ferrous nodules, and wood	
10		Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules	
		Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules	
15		Firm tan and light gray silt with 5 inch stiff clay layer	
		Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules	

20			

LOG OF BORING

PROJECT: Probe Borings
 Baton Rouge, Louisiana

FOR: Schuykill Metals Corporation
 Baton Rouge, Louisiana

BORING 5
 FILE 84-184
 DATE 27 Dec. 1984
 TECHNICIAN RCZ

DEPTH FEET	SAMPLES	Description
<div style="display: flex; justify-content: space-between; align-items: center;"> <div> <input type="checkbox"/> Classification Sample (not retained for laboratory testing) <input type="checkbox"/> UNDISTURBED SAMPLE <input checked="" type="checkbox"/> STANDARD PENETRATION TEST </div> <div style="text-align: right;">BORING DEPTH <u>14 Feet</u></div> </div>		
0		Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules
		Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules
5		Stiff tan and light gray clay with silt traces and ferrous nodules
		Stiff tan and light gray clay with silt traces and ferrous nodules
		Firm tan and light gray clayey silt
10		Very loose tan and light gray silt
		Medium tan and light gray clay with silt traces and ferrous nodules
15		
Boring <u>6</u> Boring Depth <u>12 Feet</u>		
0		Stiff tan and light gray clay with silt traces and ferrous nodules
		Stiff tan and light gray clay with silt traces and ferrous nodules
5		Stiff tan and light gray clay with silt streaks, pockets and ferrous nodules
		Stiff tan and light gray clay with ferrous nodules
		Firm tan and light gray clayey silt
10		Stiff tan and light gray clay with silt traces and ferrous nodules
15		

LOG OF BORING

PROJECT: Monitor Well Installation
Baton Rouge, Louisiana

FOR: Schuykill Metals Corporation
Baton Rouge, Louisiana

BORING 2
FILE 84-184
DATE 21 Dec. 1984
TECHNICIAN RCZ

Note: Soil strength determined by field methods

☐ UNDISTURBED SAMPLE



STANDARD PENETRATION TEST

BORING DEPTH

37 Feet

DEPTH FEET	SAMPLES	
0		
5		Very soft tan silty clay with silt pockets and ferrous nodules
10		Stiff tan and light gray clay with silt traces and ferrous nodules
15		Stiff tan and light gray clay with silt pockets and ferrous nodules
20		Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules
25		Stiff tan and light gray clay with silt lenses, streaks, pockets, and 1 1/4 inch silt layer
30		Stiff tan and light gray clay with silt lenses, silt streaks, and pockets
35		Stiff tan and light gray slightly sandy clay with sand lenses, sand streaks, and pockets
40		

LOG OF BORING

PROJECT: Probe Borings
Baton Rouge, Louisiana

FOR: Schuykill Metals Corporation
Baton Rouge, Louisiana

BORING 3
FILE 84-184
DATE 27 Dec. 1984
TECHNICIAN RCZ

☐ Classification Sample (not retained for laboratory testing)

☒ UNDISTURBED SAMPLE ☒ STANDARD PENETRATION TEST BORING DEPTH 12 Feet

DEPTH
FEET

SAMPLES

0 Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules
Medium tan and light gray slightly silty clay with silt streaks, pockets, and ferrous nodules
5 Medium tan and light gray slightly silty clay with silt streaks, pockets, ferrous nodules, and 2 inch sand layer
Firm light gray sand
10 Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules
Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules

Boring 4

Boring Depth 14 Feet

0

Soft gray clay with silt streaks, pockets, and organic matter
Soft tan and light gray clay with silt streaks, pockets, and ferrous nodules
5 Soft tan and light gray clay with silt streaks, pockets, and ferrous nodules
Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules
Medium tan and light gray silty clay with silt streaks, pockets, and ferrous nodules
10 Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules
Stiff tan and light gray clay with silt streaks, pockets, and ferrous nodules

15

LOG OF BORING

PROJECT: Monitor Well Installation
Baton Rouge, Louisiana

FOR: Schuylkill Metals Corporation
Baton Rouge, Louisiana

BORING 1
FILE 84-184
DATE 7 Dec. 1984
TECHNICIAN RM

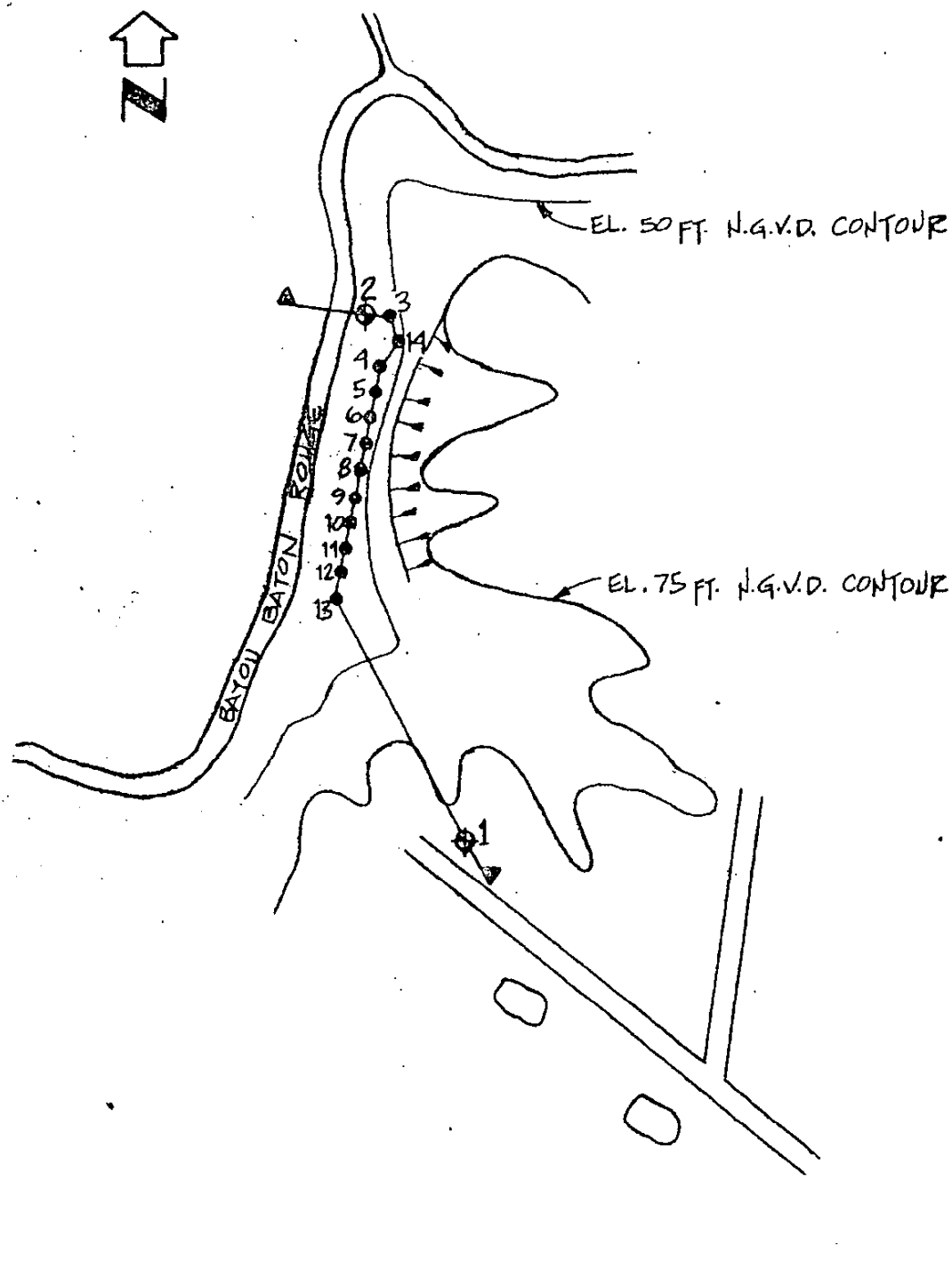
Note: Soil strength determined by field methods

☒ UNDISTURBED SAMPLE

☒ STANDARD PENETRATION TEST

BORING DEPTH 50 Feet

DEPTH FEET	SAMPLES	
0		
5		Medium tan silty clay with 1 inch clayey silt layer, silt streaks, and ferrous nodules
10		Medium tan silty clay with 1½ inch and 1 inch silt layers
15		Medium tan and light gray clay with silt pockets and ferrous nodules
20		Stiff tan and light gray clay with silt pockets
25		Stiff tan and light gray clay with 4 inch silt layer and silt streaks
30		Very stiff tan and light gray clay
35		Very stiff tan and light gray clay with silt traces
40		Very stiff tan and light gray clay with silt traces and calcareous nodules
45		Very stiff tan and light gray clay
50		Very stiff tan and light gray clay with silt streaks and calcareous nodules



BORING PLAN

APPROXIMATE SCALE: 1" = 300'

ADAPTED FROM: U.S. GEOLOGICAL SURVEY QUADRANGLE
 MAP OF SCOTLANDVILLE, LA., 7.5 MINUTE
 SERIES, PUBLISHED 1963, PHOTO REVISED
 1970 AND 1980.

MONITOR WELL INSTALLATION

LABORATORY DATA

TABLE 1

FILE NO. 84-184

BORING NO.	DEPTH	PERCENT MOIST.	DRY DEN. L.F.	ATTERBERG LIMITS		TSF	COMPRESSION TEST		FAILURE	OTHER
				LL	PL		PERCENT STRAIN	PRESSURE-KSF		
1	3-5	30	84.3			0.0	0		NONE	
1	8-10	29	89.9			0.0	0		NONE	
1	13-15	23	95.8			0.0	0		NONE	
1	18-20	22	102.5			0.0	0		NONE	
1	23-25	19	101.9			0.0	0		NONE	
1	28-30	23	97.9			0.0	0		NONE	
1	33-35	23	101.5			0.0	0		NONE	
1	38-40	33	85.6			0.0	0		NONE	
1	43-45	21	105.8			0.0	0		NONE	
1	48-50	23	96.1			0.0	0		NONE	
2	3-5	28	88.6			0.0	0		NONE	
2	8-10	24	95.9			0.0	0		NONE	
2	13-15	24	99.8			0.0	0		NONE	
2	18-20	23	93.3			0.0	0		NONE	
2	23-25	31	86.7			0.0	0		NONE	
2	28-30	23	98.4			0.0	0		NONE	
2	33-35	22	102.0			0.0	0		NONE	